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ABSTRACT

This economic analysis of Indiana public libraries is an experimental and exploratory attempt at benefit-cost analysis of library service. The economic issues that arise in decisions concerning the provision and financing of libraries are highlighted. The questions that economists raise in analyzing the provision of public goods or services are given. The issues and questions that should receive attention if public agencies or other organizations are to make efficient use of resources in supplying library services are indicated. The evaluation in this part of the Indiana Library Studies Series applies to all libraries although most of the examples and data pertain to public libraries. (Author/NH)

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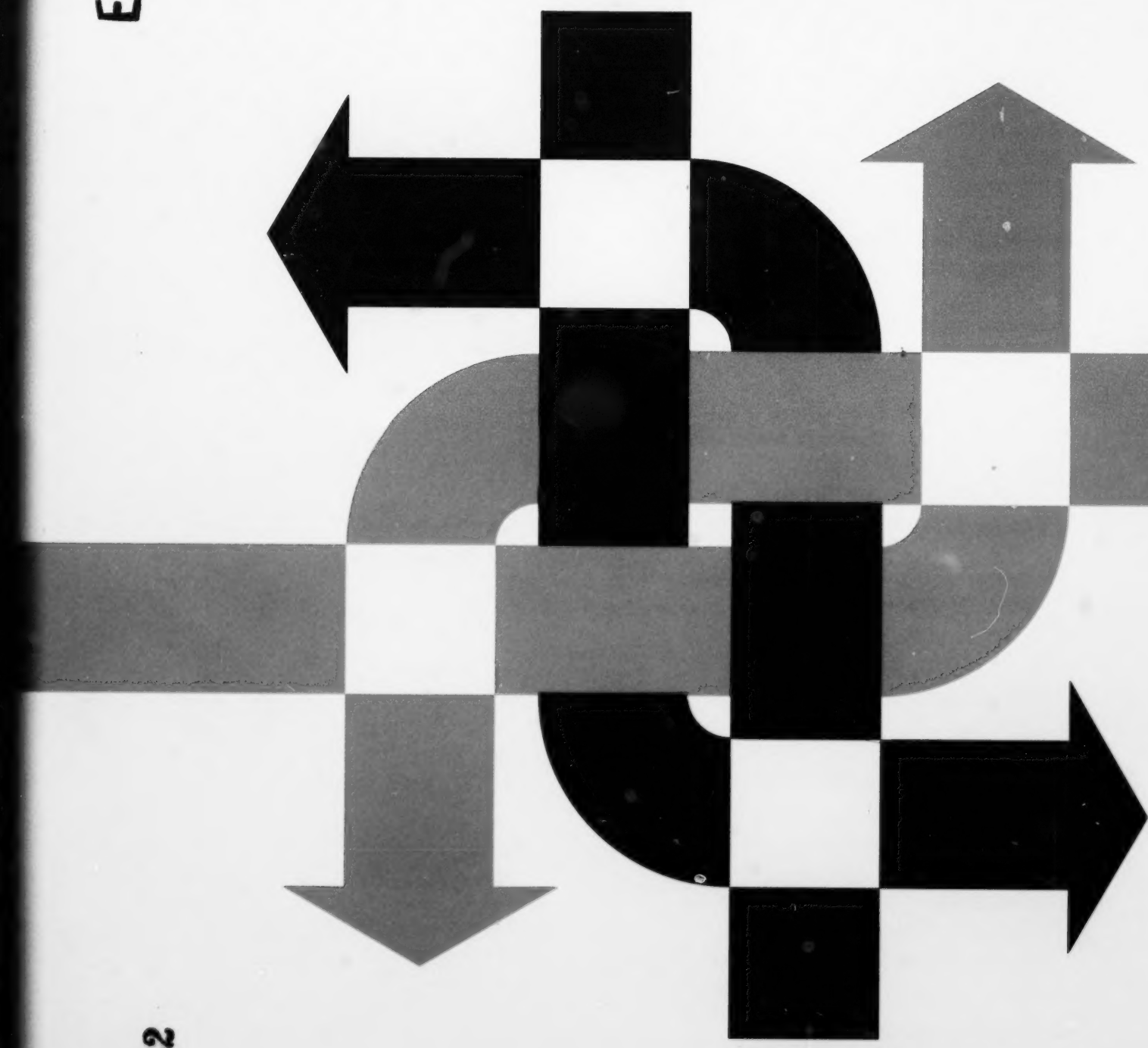

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Economic Aspects of Library Service in Indiana

The Indiana Library Studies

The Indiana Library Studies represent the first statewide exploration of Indiana libraries of all types and of the library and information needs of Indiana's citizens. A federally funded research project of the Indiana State Library, the Studies are directed by Dr. Peter Hiatt, Consultant to the Indiana State Library and Associate Professor of Indiana University's Graduate Library School. Guidance for the project and advice on the reports have been provided by the Indiana Library Studies Advisory Committee:

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Report Number Seven

of the

Indiana Library Studies

Peter Hiatt
Director and General Editor

ECONOMIC ASPECTS OF LIBRARY SERVICE IN INDIANA

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Chapter I

INTRODUCTION: NATURE OF THE STUDY

This part of the Indiana Library Studies consists of an economic analysis of public libraries. It is really an experimental and exploratory attempt at benefit-cost analysis of library service. It attempts to highlight the economic issues that arise in decisions concerning the provision and financing of libraries. It indicates the questions that economists raise in analyzing the provision of public goods or services (though, of course, some libraries are private). It suggests the issues and questions that should receive attention if public agencies or other organizations are to make efficient use of resources in supplying library services.[1] The evaluation in this part of the study applies to all libraries although most of the examples and data pertain to public libraries.

The time is opportune for an economic evaluation of public libraries. Even though public libraries in the United States have a long, distinguished position in the array of services provided by local government, they have been subject to remarkably little economic analysis. Apparently no published benefit-cost analysis of public libraries exists although one or two such studies are now underway. One is a doctoral dissertation,[2] and the other is a study in progress of the benefits and costs of a proposed library network in the State

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[1]The analysis does not, however, deal with the internal management of libraries.

[2]Haynes C. Goddard, "A Study in the Theory and Measurement of Benefits and Costs in the Public Library," unpublished doctoral dissertation, Indiana University, Bloomington, Indiana, 1970.

of Washington.[3] Another study applied benefit-cost analysis to a university library.[4]

An economist views the library as a firm (though a not-for-profit one) supplying a particular service in response to a demand somehow articulated for that service. Libraries use valuable inputs such as labor, capital facilities, books, materials, and land. In turn they produce an array of educational, informational, recreational, and cultural services. Economists raise the question of whether such use of resources is efficient. Do present methods of making decisions concerning libraries result in a use of resources in accord with the preferences of the public? Can economists suggest rules and procedures to guide the decision makers so that resource use is reasonably efficient? Efficient public policy requires that the benefits or gains from library services exceed the costs of providing the services. A comparison of benefits and costs is thus essential to prudent public expenditure policy.

Economists are interested in more than whether benefits exceed costs. They want to know the distribution of benefits and costs of library service among the various groups in the local community. Do the methods of raising revenues to finance the service take relatively more income from those with high incomes, middle incomes, or low incomes? Similarly, do the benefits of the service accrue primarily to high income families, middle income families, or low income families? The overall impact upon the distribution of income depends upon the combined effects of the financing of the service and the benefits received.

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[3] The project is being carried out by the Washington State Library. Maryan E. Reynolds is the principal investigator.

[4] Jeffrey A. Raffel and Robert Shishko, Systematic Analysis of University Libraries: An Application of Cost-Benefit Analysis to the M.I.T. Libraries," The M.I.T. Press, Cambridge, 1969.

Such economic evaluations can help the public decide what it wants libraries to do and how much of different library services to provide. But benefit-cost analysis, like all analytical techniques, is not the decision and is not a substitute for judgment. At best it can only be a helpful guide in making decisions. A benefit-cost analysis is particularly timely because public libraries are subject to a number of new trends and conditions that call for decisions about the nature and extent of public library services. Clearly libraries must be reappraised in terms of changing goals, needs, urban locational trends, changing clientele, and new pressures on metropolitan public financial resources.

Fortunately interest among economists and public officials is increasing in the application of economic analysis to expenditure decisions in the public sector. Economists employ their tools in analyzing the public sector under such terms as systems analysis, planning-programming-budgeting (PPB), benefit-cost analysis, and cost effectiveness. Although economists have not yet applied benefit-cost techniques to libraries (except in one or two special cases), they have applied them to a variety of fields -- water supply projects, transport, land usage, education, research, and health. Thus the time appears ripe for an economic analysis of libraries. And a systematic attempt to evaluate benefits and costs should be helpful in shaping public policies for libraries.

Unfortunately the available data concerning library operations are inadequate to permit a good benefit-cost analysis. Cost data are more adequate than the benefit data which are woefully inadequate. In large part, the inadequacy of data for benefit estimation results from insufficient information about library use. With more information about the use of various library services, one could at least more reliably estimate the minimum benefits by estimating the cost of providing the services in alternative ways.

The analysis in this study does lead to some significant generalizations, but perhaps more important it suggests information that needs to be collected to permit a more satisfactory comparison of benefits and costs. The available data permit rather strong generalizations about the distributional effects of financing and providing library service. Despite the inability to make a more satisfactory comparison of benefits and costs, the analysis in the paper should be helpful for public officials in making decisions about libraries. In particular it should help guide them in the approach to such decisions and to raising relevant issues and questions. Again, however, the reader should remember that this part of the study is more a "think piece" than a definitive comparison of the benefits and costs of public libraries.

The general plan of the study consists first of describing the libraries that presently exist in Indiana and the services supplied. Next is a section that considers public libraries as firms supplying a particular service in response to a demand for it. This section includes a discussion of the objectives of public libraries as seen by the library profession and as inferred from the user studies of libraries. It concludes with a discussion of arguments for public support of libraries within the framework of the recent public finance literature. The third substantive section deals with the question of how to evaluate public libraries. It presents the logic of benefit-cost analysis and discusses problems that arise in applying this technique in evaluating libraries. Then comes a chapter on available cost data for library services, and another that discusses issues in attempting to estimate benefits. As previously mentioned, much better information is available concerning costs than benefits. The final chapter presents a summary of the major findings and some of the issues suggested by the analysis.

Chapter II

LIBRARIES IN INDIANA, WITH PARTICULAR REFERENCE TO PUBLIC LIBRARIES

This chapter begins by presenting an overall picture of libraries in Indiana. It then presents detailed information concerning the public libraries, including the number by type, financial aspects, characteristics by size groups, geographic distribution, and a survey of library users and nonusers in selected cities.

An Overall View

The libraries in the state fall into six broad categories:

1) the state library in Indianapolis;
2) the public libraries located throughout the state;
3) the college and university libraries;
4) institutional libraries (primarily state hospitals, reform schools, and prisons);
5) special libraries;
6) public and nonpublic school libraries.

The following paragraphs contain a short discussion of each category.

1. Indiana State Library The Indiana Library and Historical Department was formed by act of legislature in 1925 when the Indiana State Library (established 1825), the Indiana Historical Commission (established 1915), the Public Library Commission (established 1899), and the Legislative and Administrative Reference Bureau (established 1913) were placed in one department.[1] The Public Library Commission

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[1] Annual Report of the Indiana Library and Historical Department, July 1, 1967 - June 30, 1968.

became the Extension Division of the Indiana State Library, and in 1939, the Legislative Bureau was withdrawn and made a separate agency. Accordingly, the Indiana Library and Historical Department today consists of two divisions, the Indiana State Library and the Indiana Historical Bureau--the former in charge of the state library service and the latter in charge of the state historical service.

The management and control of the Department is vested in the Indiana Library and Historical Board, consisting of five members appointed by the Governor. Four of the members are recommended to the Governor, one each by the Indiana Library Association, the Indiana Library Trustee Association, the Indiana Historical Society, and the State Board of Education. In addition to other duties, the Board may receive and administer any state or federal aid that becomes available for the improvement and development of library services in Indiana.

The primary function of the Indiana State Library is to provide service to all officers, agencies, and departments of the state government. In addition, it provides for the individual citizens of the state those specialized library services not generally appropriate, economical, or available in other libraries; it encourages and supports the development of the library profession; and it seeks to strengthen services of all types of publicly and privately supported libraries. In 1968, the state library had a budget of $459,170 and a collection of 1,059,207 volumes.[2]

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[2] Ibid.

In 1965, the Indiana State Library inaugurated an interlibrary communication system using teletypewriters. As of the first of May, 1969, twenty-two state libraries and seven college libraries comprised the network. Teletypewriter installation and rental, message charges, supplies, and other costs are financed from federal funds administered under Library Services and Construction Act. The overall objective of the system is to develop "maximum utilization" of Indiana's library resources. Specific purposes as outlined by the Indiana State Library are as follows:

1. locate materials for interlibrary loan;
2. request materials for loan or duplication;
3. request information from other libraries;
4. transmit urgent and significant professional information to key libraries;
5. make resources of the Indiana State Library more readily available to citizens of the state;
6. provide opportunity for increased interlibrary cooperation in Indiana;
7. provide data on effect of electronic communication on interlibrary activity.

2. Public Libraries The 246 public libraries in Indiana included nearly 88 per cent of the state's population in their districts in 1967.[3] Those people in areas not served by public libraries comprised 12 per cent of the population. Nearly all of the 566,449 persons not served were in areas classified as rural by the U. S. Bureau of the Census in 1960. The public libraries had a combined book stock of 9,728,000 volumes in 1967 and a combined circulation of 25,525,000. Most public libraries provide other services with nonbook materials. Among these materials

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[3]Indiana State Library, Statistics of Indiana Libraries, 1967.

are projectors, films, slides, recordings, pictures, pamphlets, maps, and so on. The small libraries, of course, have less in nonbook materials than the large libraries. The aggregate revenue for the public libraries in 1967 was $16.4 million. Nearly 40 per cent of the population served was registered to borrow books. (Eleven libraries do not keep registration records.) Subsequent sections will present more details concerning Indiana's public libraries.

3. College and University Libraries The 46 college and university libraries have the primary function of serving their resident students and faculty, but as a general rule, residents of Indiana who are not students may utilize their facilities. For the state universities (Indiana University, Purdue, Ball State, Indiana State) any resident of Indiana able to show identification may utilize the university libraries. Private colleges are more likely to refuse use of their libraries although many of them have made their facilities available to Indiana residents.

The number of volumes in the college and university libraries ranges from just over 2,000 to 1.9 million.[4] The 1966-67 library budgets for the group ranged from a low of $1,095 to a high of $2,819,116. Several small libraries did not report volumes or expenditures, so the figures for the low end of the range may be even smaller than those given here.

4. Institutional Libraries The institutional libraries (there are 22 of them) serve a specialized function for readers who are either hospitalized, legally confined, or have special disabilities such as

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[4] Ibid.

blindness or deafness. Most such libraries are small--only one (that of the Indiana Reformatory) reported a collection of more than 10,000 volumes in 1967.[5]

5. Special Libraries This group of 58 consists of mainly business, defense, and specialized libraries that maintain sizable collections pertaining to their respective functions and that generally permit use of the resources by residents of the state or other interested parties. Most of these special libraries co-operate fully with public and university libraries through interlibrary loan, thus making a valuable addition to Indiana's overall information resources. A few of these special libraries have 30,000 volumes or more, but about half of them have fewer than 5,000 volumes.

6. School Libraries The division of Instructional Media, State Department of Public Instruction recently conducted a survey of services and materials provided by the individual school libraries, instructional media centers, or audio visual centers.[6] Nearly 2,300 public schools and 363 nonpublic schools responded. Virtually all had some library service available in the school. The questionnaire did not ask for information about circulation and library expenditures.

The average number of book titles in these school libraries of responding schools was approximately 3,000. The average number of periodicals was 25. These averages were undoubtedly influenced strongly by the large schools with large libraries. The numerous small schools probably had very small libraries.

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[5] Ibid.

[6] Correspondence with Mr. Dale C. Hartzler, Director, Division of Instructional Media, State Department of Public Instruction, date July 15, 1969.

About half of the public school libraries did not open before daily classes began, about 40 per cent were open only part time during the school day, and about two-thirds were not open after school. Of those open after school, most were open only during the period before 6 p.m. Very few libraries were open on Saturday. Only 16 per cent were open at some time during the summer. The bulk of the school libraries had very limited seating capacity; about half of them could seat only 4 per cent or less of their school's enrollment. Approximately two-thirds of the school libraries did not subscribe to the Reader's Guide to Periodical Literature. Also, about two-thirds subscribed to less than two newspapers.

Types of Public Libraries

As provided in legislation (Acts of 1947, Ch. 321, Sec. 4), public libraries in Indiana fall into two broad groups. The first group, Class I libraries, included 227 of the total 246 public libraries in the state as of December 31, 1967. Only 19 were in the Class II group. Class I libraries are those organized under the 1947 Act or converted to it by action of their boards. Class II libraries are one of the following: they are administered by school boards they are endowed; they are independent township libraries; or they are organized under certain special laws. In 1967 Class II libraries included 4 administered by school boards, 5 independent township libraries, and 10 privately endowed or organized under special laws. Of the Class I libraries, 72 were town-township units, 42 were county units, and the remainder were town units. About half of the county libraries do not include all the county's townships within their districts. In these cases, some townships apparently

have chosen not to be included in the county library district and not to pay taxes to support the library. In the entire state, 375 townships (37 per cent of the total number of townships) have no service from a public library. Another 39 townships have only partial service--a part of each is in the limits of a town and is served by the public library of that town.

The functions of public libraries as defined in the 1947 Act are as follows:

> Such public library service is to be provided by a library supported by public funds and operated for the benefit and free use of individuals and groups of all ages in the community in the meeting of their educational, informational, and recreational interests and needs. These interests and needs are met by the collection and organization of books and other library materials and the dissemination of the knowledge contained therein through reference, loan, and related services.

For Class I libraries, the library board has the authority to levy taxes on taxable property within the defined district of service (i.e. towns, townships, or county) to raise an amount necessary for the proper operation of the library--such a tax being not less than 5¢ and no more than 37¢ on each $100 of taxable property. The library board of a city, town, or county library district must be composed of resident citizens who have resided at least two years in that library district. Appointments to the board are made as follows:

(i) three board members to be appointed by the judge of the circuit court of the county in which the library district is located;

(ii) two members to be appointed by the city council in the case

of a city library, or by the board of county commissioners for a county library;

(iii) two members (at least one a woman) to be appointed by the school board of the school district in which the headquarters of the library district is located.

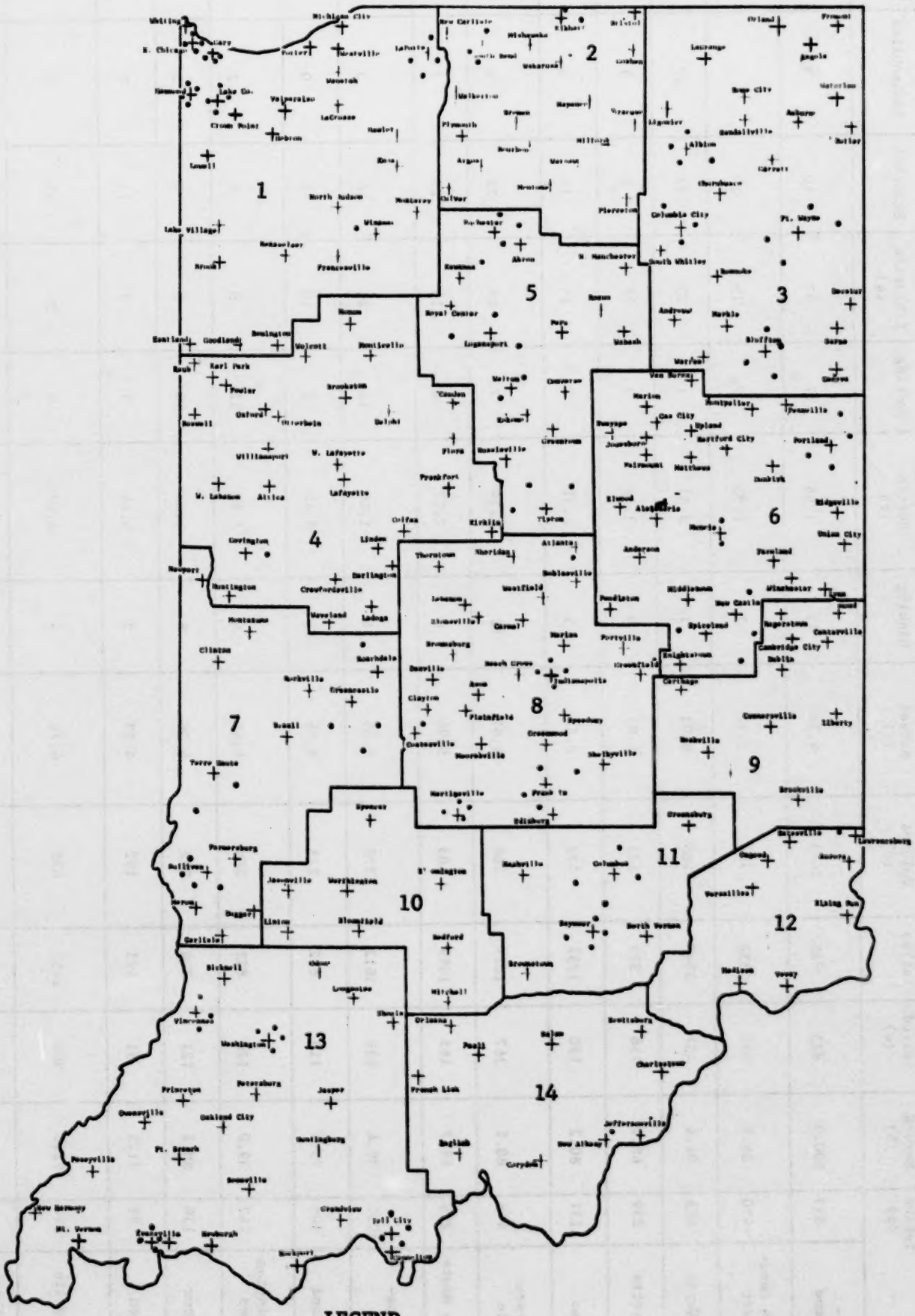
All appointments, other than the first, are for a term of four years. The Class II libraries are, of course, subject to different rules, depending upon the authority under which they exist.

Geographic Distribution

We have assembled information pertaining to the public libraries to show their distribution among the fourteen economic regions of Indiana used by the state agencies as the planning and development regions. The accompanying map shows the boundaries of the fourteen regions and the location of the public libraries. Table 1 shows the information for all the fourteen regions.

Column 1 of Table 1 gives the population of each region in thousands. Column 2 shows the percentage of the population served, that is, the percentage included within library districts and subject to the library tax. Four regions have less than 80 per cent of their populations served by public libraries. At the other extreme, four regions serve over 90 per cent--one serves 100 per cent. Three others serve about 89 per cent, and one serves 87 per cent.

Economic Regions and Indiana Public Libraries, 1967



LEGEND

+ denotes a library

• denotes service by bookmobile or branch/station

The number given is the region number

Table 1
Statistics for Indiana Public Libraries by Regions, 1967

	1 Population (a)	2 Percent Served (b)	3 Population Served (c)	4 Circulation	5 Number of Volumes (d)	6 Circulation Per Capita Served (e)	7 Ranking	8 Book Stock Per Capita Served (f)	9 Ranking	10 Number of Libraries (g)	11 Extensions (h)		
											Branches	Bookmobiles	Schools Hospitals
(1) Gary-Hammond	833	100.0	833	3816	1401	4.58	13	1.68	11	27	80	5	191
(2) South Bend-Elkhart	450	86.8	391	2338	724	5.97	7	1.85	9	19	17	3	115
(3) Ft. Wayne	473	92.4	437	3948	1665	9.03	1	3.81	1	25	32	10	158
(4) Lafayette	239	66.2	158	925	521	5.85	9	3.29	2	28	2	1	59
(5) Kokomo	237	80.2	190	1237	478	6.51	5	2.51	4	15	13	3	76
(6) Anderson-Muncie	458	80.1	367	1827	789	4.97	12	2.14	7	28	25	5	137
(7) Terre Haute	209	88.7	185	1099	403	5.94	8	2.17	8	13	18	3	40
(8) Indiana-polis	1035	90.4	936	3612	1370	3.85	14	1.46	14	26	56	3	229
(9) Richmond	146	75.1	110	612	273	5.56	11	2.48	5	10	6	0	39
(10) Bloomington-Bedford	142	89.0	126	825	204	6.55	4	1.61	12	8	4	2	39
(11) Columbus	136	89.1	121	736	222	6.08	6	1.83	10	6	4	2	51
(12) Madison	85	71.5	61	423	192	6.93	2	3.14	3	8	14	2	26
(13) Evansville	392	92.8	364	2457	876	6.75	3	2.40	6	24	31	3	142
(14) New Albany-Jeffersonville	201	76.8	154	867	238	5.63	10	1.55	13	10	7	1	37

Footnotes: Columns 1-9 are based on 1967 data.

(a) Population figures are given in thousands and are based on county estimates from Editor & Publisher, Market Guide - 1967, pps, 156, 162.
(b) Percent served denotes the percentage of the region's population paying taxes towards the support of a county or township library.
(c) Column (3) = column (1) x (column (2)/100).
(d) Three libraries out of 246 did not report these figures. Regions affected are 3, 5 and 8.
(e) Column (6) = column (4) ÷ column (3).
(f) Column (8) = column (5) ÷ column (3).
(g) Number of libraries as of the end of 1968.
(h) Number of extensions as of the end of 1967.

The two largest regions (Indianapolis and Gary-Hammond) ranked at the bottom in circulation per capita (Col. 7). But Fort Wayne with the third largest population ranked first in per capita circulation. Column 9 shows the ranking in book stock per capita. Some regions rank the same or nearly so in both circulation and book stock per capita. Several regions, however, change sharply in their rankings by those two criteria. For instance, Lafayette ranks ninth in per capita circulation but second in per capita book stock; Bloomington - Bedford is fourth in circulation but twelfth in book stock.

Table 2 shows the amount of non-book materials and equipment in the public libraries of each region. There is wide variation among the regions in the amount of these non-book materials. Noteworthy is the large collection of such material by the Fort Wayne region and the relatively small collection (relative to population) by the Indianapolis region. Most regions have libraries with substantial collections of uncatalogued materials (pamphlets, maps, pictures, etc.), films and film strips, sound recordings, microfilms.

Table 2

Indiana Non-Book Materials in Public Libraries, at December 31, 1966

REGION	EQUIPMENT								MATERIALS						
	16 mm Motion Picture Sound Projector	Projector Screen	Slide and/or Filmstrip Projector	Record Player	Tape Recorder	Microfilm Reader	View-master Stereoscope	Other	Slides	Filmstrips	Microfilm and Microcards	Sound Recordings	Films (Includes Borrowed)	View-master Reels, Stereographs	Uncatalogued Pamphlets Pictures Maps etc.
1	17	21	10	42	8	17	8	36	450	482	5,618	19,350	2,249	381	105,277
2	9	10	6	17	1	8	66	6	1,252	680	3,879	7,980	2,803	141	33,261
3	7	6	5	15	1	37	68	10	11,587	140	17,506	30,936	4,296	10,455	558,099
4	1	0	0	11	0	3	12	1	600	386	1,447	2,820	28	806	14,782
5	2	6	8	10	2	7	73	3	0	386	4,346	4,180	483	3,241	21,389
6	4	6	7	10	1	7	21	2	96	1,737	2,632	8,532	804	5,575	42,013
7	2	2	2	7	1	4	0	1	0	39	1,565	2,358	121	0	3,507
8	5	8	5	10	1	11	6	2	614	113	4,703	6,060	477	405	9,685
9	2	2	1	4	1	4	6	1	726	42	1,356	5,317	19	2,881	30,167
10	2	2	1	3	0	1	0	2	220	0	88	1,847	2,102	0	6,250
11	2	2	1	3	1	3	0	1	13	114	896	2,145	386	0	2,964
12	0	2	2	4	1	0	0	1	0	129	0	1,370	0	0	628
13	4	7	3	15	3	15	32	14	1,038	175	2,235	6,158	492	312	45,038
14	5	5	4	4	3	5	11	3	260	118	546	1,824	435	3,410	21,521

Financial Aspects

All but two of the public libraries in the state in 1967 received the bulk of their revenue from property taxes. One was entirely supported by its endowment, another by its endowment plus a contract fee from the township. Three others received some support from endowments in addition to the tax revenue. Public libraries also received revenues from fines, gifts, and miscellaneous sources, but for all libraries in the state, tax receipts accounted for over 95 per cent of total receipts.

As mentioned previously, the legislation providing for public libraries authorizes them to impose taxes on property within their districts. For Class I libraries, the tax may vary within the limits of 5¢ and 35¢ per $100 assessed value of taxable property. Two towns (Aurora and Fort Wayne) were at the upper limit of the tax rate in 1967, and another (Hammond) was very close to the limit. The township or county rates were generally lower than the town rates; only two townships or county rates were over 30¢. A few taxing units have library rates below 5¢. The average tax rates per $100 assessed valuation in 1967 were $0.1815 for town library districts, $0.1212 for township districts, and $0.1317 for county districts. The tax receipts for reporting libraries in 1967 amounted to $3.87 per capita for the population within library districts. Non-tax receipts were only $0.15 per capita.

Total expenditures of all public libraries in the state were $16,095,385 in 1967. Over half the total (51.4 per cent) was for salaries. Expenditures for books and magazines amounted to 17.5 per cent

of the total while other operating costs came to 31.1 per cent. Per capita expenditures in 1967 were $3.95 for the reporting libraries. Total expenditures in 1967 were 32 per cent greater than in 1965.

Trends

Table 3 provides data on the state's public libraries for the period 1953 to 1968. The number of such libraries remained virtually the same for the entire period. The aggregate volumes in the libraries rose steadily from 6,401,910 in 1953 to 10,153,483 in 1968. Total annual circulation rose steadily until 1963 after which it fluctuated and ended at about the 1963 level in 1968. Circulation per registered borrower increased during the first half of the period and then declined so that the 1968 figures (16.7) were close to that of 1953 (16.3). Circulation per capita rose steadily during the first seven years, remained close to the 1959 level (with two exceptions) until 1966 then dropped to a lower level for the last three years. As would be expected, total expenditures climbed steadily from $4,921,823 in 1953 to $16,676,742 in 1968. Expenditures per capita increased by 150 per cent (from $1.60 to $4.08) while expenditures per book circulated increased by 120 per cent. A substantial part of this increase in expenditures was the result of higher prices rather than greater quantities of inputs.

Data by Size Group of Library

Table 4 contains data for the libraries by size categories. Of the 245 public libraries in Indiana in 1967, only 20 (8.3 per cent of the total) served districts with 50,000 or more population. The libraries in this largest size category, although comprising just 8.2 per cent of all

Table 3

SELECTED STATISTICS FOR PUBLIC LIBRARIES IN INDIANA, 1953-1968

	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968
Total # of Volumes in P. Libraries*	6.4	6.6	6.8	6.9	7.0	7.3	7.5	7.6	7.8	8.1	8.3	8.6	8.9	9.4	9.7	10.2
Total Annual Circulation*	16.2	17.9	18.3	19.3	19.8	21.0	21.7	22.7	23.3	25.0	25.0	25.1	25.0	24.7	24.5	25.2
Circulation Per Reg. Borrower	16.3	17.2	17.2	17.1	17.9	19.7	19.8	19.7	19.4	19.9	18.8	19.6	18.6	17.2	17.0	16.7
Circulation Per Capita (Areas Reporting)	5.3	5.8	5.9	6.2	6.4	6.7	6.8	6.1	6.3	6.6	6.6	6.7	6.7	6.1	6.1	6.1
Total Expenditures* in Dollars	4.9	5.3	5.6	6.0	6.4	7.1	7.7	8.3	9.1	9.9	10.7	11.6	12.2	13.1	16.1	16.7
Expenditures Per Capita(Areas Reporting)	$1.6	$1.7	$1.8	$1.9	$2.1	$2.3	$2.4	$2.3	$2.5	$2.6	$2.9	$3.1	$3.2	$3.4	$4.0	$4.1
Expenditures Per Book Circulated	$.30	$.30	$.31	$.31	$.32	$.34	$.36	$.37	$.39	$.39	$.43	$.46	$.49	$.53	$.66	$.66

*In Millions.

SOURCE: Indiana State Library, Statistics of Indiana Libraries, Annual Reports.

Table 4

Statistics for Public Libraries
in Indiana
by Size Categories, 1967

	0 to 2,499	2,500 to 5,999	6,000 to 9,999	10,000 to 17,999	18,000 to 49,999	50,000 and Over	All Categories
Number of Libraries[b]	63 (56)	62 (59)	41 (40)	38 (35)	21 (20)	20 (17)	245 (227)
Per Cent of Population[a] Registered Borrowers	56	50	44	39	43	31	36
Book Volumes:							
Per Capita	5.6	3.6	2.8	2.1	2.2	1.9	2.2
Per Borrower	9.9	7.1	6.3	5.5	5.1	6.1	6.1
Circulation:							
Per Capita	7.2	6.6	5.0	6.2	6.3	5.0	5.5
Per Borrower	12.8	13.1	11.4	15.9	14.8	16.4	15.2
Expenditures:							
Per Capita	3.22	2.89	2.58	2.67	2.90	4.20	3.59
Per Borrower	5.89	5.76	5.85	6.96	6.79	13.69	9.87
Per Book Circulated							

SOURCE: Data for registered borrowers, book volumes, library expenditures, and evaluation from Indiana State Library, Statistics of Indiana Libraries 1967. For population see Footnote a.

[a]Estimated population for 1967. For counties and for cities over 5,000, the source was State Department of Public Health; for others units, the 1967 estimate was a simple projection of the 1950 to 1960 trend.

[b]The numbers in parnetheses are those included in the calculations for the rest of the table. Nineteen libraries did not submit complete information so they were eliminated from the calculations.

public libraries, accounted for 47.6 per cent of the total book stock for all libraries in the state, for 65.8 per cent of total expenditures, and for 51.2 per cent of the total circulation. At the other end of the spectrum of size groups, 63 libraries (25.7 per cent of all libraries) served districts with fewer than 2,500 population. These small libraries were responsible for just 5.9 per cent of the total book stock, 2.2 per cent of total expenditures, and 3.0 per cent of total circulation.

Libraries whose districts included fewer than 10,000 people constituted 51.0 per cent of all libraries, but only 15.5 per cent of the total book stock, 7.0 per cent of total expenditures, and 10.2 per cent of total circulation. The two largest categories (districts with 18,000 or greater population) included 16.8 per cent of all libraries but accounted for 62.5 per cent of the total book stock, 78.2 per cent of all expenditures, and 68.7 per cent of total circulation. The middle-sized libraries (in Indiana, those whose districts contain between 6,000 and 18,000 people) comprised 32.2 per cent of all libraries, but accounted for only 21.9 per cent of the aggregate book stock, 14.9 per cent of total expenditures, and 21.1 per cent of total circulation.

Of all public libraries in Indiana, 14 per cent (34 libraries) had annual incomes in 1967 of less than $5,000. Another 21 per cent (51 libraries) had incomes of between $5,000 and $10,000. Almost two-thirds of the state's libraries had annual incomes of less than $25,000 in 1967. In terms of book stock, 24 per cent (59 libraries) had under 10,000 volumes in their libraries. Another 44 per cent (108 libraries) had between 10,000 and 25,000 volumes. About 83 per cent of the public libraries in the state had fewer than 50,000 volumes in 1967. The small libraries dominate in numbers, but the relatively few large libraries account for the bulk of the book stock, circulation, and expenditures.

Row 2 of Table 4 shows the per cent of the served population that was registered as borrowers for each of the size categories. For the entire state, 36 per cent of the population in public library districts was registered as borrowers, based on the estimated 1967 population of the library districts. With one exception, (for the 18,000 to 49,999 category) the registration percentages declined as the size category increased. The libraries serving the largest communities have reported 31 per cent of their population as registered borrowers, while those serving the smallest communities have reported 56 per cent. We strongly suspect that the smaller libraries do not keep their registration lists up-to-date as well as the larger libraries. Some of the smaller libraries show well over 100 per cent of the population of their districts as registered borrowers. These relatively high registration figures could, however, be the result of registration of non-residents who live in nearby areas that have contracted for library service.

Table 4 shows an inverse relationship between volumes per capita and community size. For the state as a whole, public libraries have 2.2 volumes per person in library districts. The range is from 5.6 volumes per person for the smallest libraries to 1.9 volumes for the largest libraries. Circulation per capita and per borrower does not show a clear relationship to the size of the community. The smallest communities served by public libraries have the largest circulation figure per capita, but there is no particular association between size and circulation for the groups between the extremes.

The largest libraries have the highest expenditures per capita ($4.20)

This figure declines over the next three largest size categories, reaching a minimum of $2.58 per capita for libraries serving communities with a population between 6,000 and 9,999. Then the per capita expenditure rises reaching $3.22 for the smallest size group.

Use by Adults

A part of the overall study of public libraries in Indiana consisted of a survey of use by adults in ten selected cities. While this survey was valuable in showing whether usage in Indiana was similar to that found in other surveys, it did omit the largest single group of users--school age children. As mentioned earlier in this report, other surveys have shown that from two-thirds to three fourths of the users of public libraries are youths through the high school age. A survey that included children would have been valuable because it would have revealed if the same pattern exists for small libraries in Indiana as for larger libraries. All the surveys we have examined cover large libraries, except for an occasional study of medium-sized libraries. The bulk of public libraries in Indiana are small, i.e., they serve communities of less than 25,000 in population.

The survey of adult use in Indiana shows patterns similar to the other surveys. Library users in Indiana had completed more years of schooling and had higher-status occupations than the general public. In the families contacted as part of the survey of the general public, 82.7 per cent of the husbands and 70.2 per cent of the wives reported that they did not use the public library. Of the families classified as users (those who had borrowed books from their public library in the 60 days prior to the survey), 41.4 per cent of the husbands and 11.0 per cent of the wives reported that they read no books.

The bulk of the use was for recreation or entertainment. Among the user families, 86 per cent of the wives and 61 per cent of the husbands said their primary purpose of using the public library was for entertainment. Most people (91 per cent among users, 82 per cent among the general public) thought the public library was a valuable institution to have and was an important source of information for the community. An even higher percentage in both categories thought that the public libraries were doing an outstanding job. The survey showed that businessmen, farmers, and labor organizations used public libraries very little. They simply depended upon other sources for the information they needed. These findings tend to confirm the results of other surveys and to indicate that the patterns of usage and opinions are about the same in Indiana as in other parts of the United States.

Chapter III

THE NATURE OF PUBLIC LIBRARIES

Perspective

In one view, libraries are a part of the broader field of public (or mass) communications -- defined as "the machinery by which words, sounds, and images flow from points of origin through an impersonal medium to hosts of unseen readers and audiences".[1] In this broad field, public libraries are in direct although generally unrecognized competition with commercial media. In fact, the non-commercial public libraries comprise a small part of the entire field of mass connumications; private profit-seeking enterprises dominate the field.

The most comprehensive study of the public's consumption of the various media in mass communications was that of Leigh in 1950.[2] By relying on numerous surveys, he estimated that 90 to 95 per cent of all adults listened to the radio fifteen minutes or more daily, and 85 to 90 per cent regularly read one or more newspapers.[2] About two-thirds of all adults read a magazine more or less regularly, and approximately half were regular movie goers. One-fourth of all adults claimed to have read one or more books per month.

More recent studies indicate that television has largely replaced the radio and perhaps substituted for some movie going, but that reading habits have not changed much since Leigh wrote. A study of leisure time showed that urban workers in the United States spent, on the average, 28 per cent of their leisure time watching TV, 7 per cent reading newspapers, 2 per cent reading

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[1] Robert D. Leigh (ed.), The Public Library in the United States, Columbia University Press, 1950, p. 25.

[2] Ibid.

magazines, 2 per cent reading books, and only 1 per cent listening to the radio.[2a] A survey of information needs of adults in Indiana showed that where comparisons are possible the public in the state tends to follow closely the national patterns in using the various media.[2b]

All the surveys indicate that books are the least widely used of the major agencies of mass communications. And the amount of book reading is highly concentrated among a relatively few intensive readers; Leigh estimated that 10 per cent of the book readers account for over half of the books read. If, as most surveys show, book readers constitute about 25 per cent of the population, then just 2.5 per cent are responsible for more than half of all book reading. Leigh estimated that the top 20 per cent of active library users accounted for 75 per cent of annual circulation of public libraries.

Data from a variety of sources give rough indications of patterns in the annual purchases of books.[3] In 1968, purchases of books by all libraries constituted over 18 per cent of the total dollar volume of book sales.[3] Textbooks accounted for nearly 18 per cent of the total and reference books for about 15 per cent. In 1968 paperbound books constituted about 42 per cent of all books sold but only 23 per cent of total expenditures. Sales have increased most rapidly for paperbacks, book-club books, and college texts. Between 80 and 90 per cent of all juvenile books costing over $1 were bought by public libraries;

[2a] John P. Robinson, "Television and Leisure Time: Yesterday, Today, and (Maybe) Tomorrow," Public Opinion Quarterly, Summer, 1969, pp. 210-222.

[2b] Charles F. Bonser and Jack R. Wentworth, A Study of Adult Information Needs in Indiana, Report No. 3 of the Indiana Library Studies, Bloomington, Indiana, 1970. (See also P. McEvoy, "Media Habit Survey of Indiana Homes," Journalism Quarterly, Vol. 36 (1959), pp. 63-64.)

[3] The Bowker Annual, 1970, R. R. Bowker, New York and London. See also Philip H. Ennis, "The Library Consumer," The Public Library and the City, R. W. Conant, (ed.), The M.I.T. Press, 1965, pp. 17-23.

this high rate of purchase shows up in the rising proportion of juvenile books in the libraries' stock.

Of the total books sold in 1968, paperbacks led in relative share with 42 per cent and juvenile books had 35 per cent. Book clubs distributed twice as many books as book stores, and book stores sold only a small percentage of all paperbacks. According to one estimate, between 11 and 20 per cent of the population buys paperback books, from 3 to 5 per cent belongs to book clubs, and less than 1 per cent patronizes book stores.

Another approach to provide perspective is to look at public libraries in relation to all libraries -- state, school, special, and federal libraries. State libraries usually provide the following services: general library service to public or state officials, extension service, historical and archival service, legislative reference, and law library service. The extension service is an attempt to stimulate interest in libraries by local governments, particularly in rural areas not having public libraries. State libraries also provide assistance to local libraries to promote improved service. Under the Library Services and Construction Act, state libraries administer federal funds for library service and for planning and coordinating public library service within the states. In promoting public library service, state libraries provide traveling libraries, small subsidies to local libraries and frequently promote the coordination and consolidation of local libraries into larger units.

School libraries are probably the most numerous of all. But the U. S. Office of Education found that only 50 per cent of schools in a 1958-59 survey had libraries; nearly all secondary schools had libraries but only

a third of the elementary schools had them. Schools without libraries generally had some kind of book service or collection in the classrooms. Many of the school libraries were considered inadequate with respect to "staff, quarters, collections of materials, and financial support."[4] The 1958-59 figures showed a substantial increase since 1953-54 in elementary schools with libraries. Much of the apparent improvement for elementary schools could have resulted from consolidations that put small schools together with larger ones having libraries or that made the school district large enough to support a school library. What little information is available indicates that rural schools rarely provide library service unless there is a county-unit school system. Otherwise, the rural schools are too small to provide library service.

The large university libraries are among our great libraries, providing excellent research facilities in addition to serving the usual needs of students. Small college libraries typically serve student needs but are not adequate for the research needs of faculty. The special libraries serve the needs of a special clientele for technical information; they frequently rely upon non-conventional sources and methods in providing such service. Many federal agencies maintain libraires, some of them being large and important collections. The Library of Congress is, of course, the largest of the federal libraries. These libraries serve primarily the agencies or departments that established them. Persons inside and outside the federal government use the larger of these libraries for

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[4] Frank L. Schick, ed., Future of Library Service, University of Illinois, Graduate School of Library Service, 1962, p. 159.

research. But there are smaller libraries maintained by national parks, Indian schools, veterans' hospitals, etc. that serve a broader clientele.

Although public libraries are only a part of the totality of libraries in the United States, they are far more numerous than any other except public school libraries. Certainly most adults rely upon local public libraries for their library service.

Organization and Finances of Public Libraries

The legal authority under which local governments establish and maintain public libraries varies from state to state. In some, the authority stems from a general act of the legislature; in others it may stem from the general powers contained in home-rule charters. In no case does the state require the provision of library services by local governments--the decision to provide library service rests upon local initiative.

The prevalent pattern of library organization includes an appointed lay board with legal power to manage the library, generally through an executive who is in charge of the library but responsible to the board. Most boards consist of from five to nine members who serve without pay. The boards generally rely upon the chief librarian to manage the library and even to make policy decisions. The primary function of the boards has been to sponsor the library in the community. They provide access to the local political authorities and to the local public revenues. There are, of course, exceptions to this prevalent pattern. Some libraries are really branches of city governments and operate much as other departments do. Still others are part of local school systems and depend upon school authorities for their appropriations.

R. D. Leigh, writing in 1950, felt that public libraries were in a weak political position because library boards tended not to be strong political fighters.[5] Specific library projects or objectives were more often than not achieved through drives by ad hoc citizens groups organized solely for this one objective. The professional library organizations (primarily the American Library Association) supply the most effective political pressure on a continuing basis. But Leigh states that they have difficulty in maintaining the loyalty of members over time.

Aggregate expenditures of state and local governments for public libraries have risen from $154 million in 1955 to $535 million in 1967.[6] The library's share of total state and local government expenditures rose from 0.43 per cent in 1954 to 0.50 per cent in 1967. For cities alone, expenditures on libraries constitutes a larger share of total expenditures--for 1960 the share was 1.2 per cent. In a group of 21 cities in one sample, the library share averaged 2.7 per cent. During the period 1955 to 1967, library expenditures per capita rose from $0.93 to $2.70. The per capita figures among individual local governmental units vary widely; for instance, in the Cleveland metropolitan area the range was from a low of $1.13 to a high of $4.62 in 1956. In central cities, vitrually all expenditures are for current operations while for suburban communities a substantial proportion goes for capital outlays. Suburban communities have constructed new buildings or added to existing ones to serve their growing populations. In

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[5]Leigh, op. cit., p. 110.

[6]Simeon E. Leland, "Financial Support of Local Governmental Services With Special Reference to Public Libraries in Cities of Medium Size," The Medium-sized Public Library Its Status and Future, Carnovsky & Winger (eds.), The University of Chicago Press, 1963, p. 31.

Cleveland, per capita expenditures for libraries in constant (1956) dollars actually declined a little between 1940 and 1956. This downward trend reflected sharply rising prices for personnel services, books, and periodicals.[7]

About 90 per cent of the funds for libraries is provided by local governmental units -- virtually all from property taxes. About 5.5 per cent is from state aid and slightly under 5 per cent is from fees, charges, and fines. Some states provide no state aid for local libraries while others provide substantial sums. In 1956 the federal government began to provide money to states for promoting better and more extensive service by public libraries. The grants have grown from a few million dollars to approximately fifty million dollars for fiscal 1970.

Libraries as Firms Supplying a Service

Because the object of our study is to evaluate public libraries from the standpoint of an economist, we may regard the library as a firm (a not-for-profit firm) supplying various services. A firm hires factors of production (the necessary inputs) to produce the goods or services that it sells. The library hires labor, purchases supplies and equipment, and manages the organization so as to provide library services. The library is thus a producing unit similar to the firm in economic theory. Both the firm and the library must decide what to produce, how much to produce, and how to produce it. Both must make these decisions within certain constraints. The library budget provided by local government constraints the decisions made by the public library.

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[7]William Hellmuth, "Trends in Urban Fiscal Policies: The Effect on Library Functions," Conant, op. cit., pp. 155-167.

Both the firm and the library need rules to guide them to making decisions. These decision rules stem from the objective of the producing unit. Economic theory postulates that firms attempt to maximize profits and make decisions accordingly. Private markets yield prices to serve as signals to firms--signals that affect decisions concerning how to maximize profits. Consumers express their desires or demands for various products by their willingness to pay certain prices for them. This willingness to pay results in what economists call a demand curve or schedule, showing the prices consumers will pay for various quantities of a product. The supply of a product reflects the willingness of producers to sell or produce at different prices. If firms can sell the product as prices that at least cover their costs, they will produce it. In competitive markets, supply and demand interact to yield equilibrium prices. At these prices, the amounts producers are willing to supply equal the amounts consumers are willing to buy.

Changes in prices result from changes in supply or demand or both. Producers and consumers then change their decisions in response to changes in prices. For instance, an increase in demand that raises the price of a product will cause firms to increase their outputs and perhaps cause new firms to begin production. A fall in the price of an input will cause firms to use more of that input and less of some others as they attempt to produce a given quantity at the lowest possible cost. In all these cases, the behavior of firms follows from their attempts to maximize profits.

The public library differs, of course, from the firm in its objectives and in not charging a price for its output. No market prices exist to guide the library in making decisions concerning what and how

much to produce. The public decides how much to use the library (how much library services to consume) at a zero price as libraries do not charge for most of their services. The political process determines the budget of the library and thus the overall magnitude of its operation. Within the limits of this budget, however, the library must decide what mix of services to supply (how much to spend on reference services, circulation, special programs, films, records, etc.) and how best to provide that mix.

Public libraries purchase their inputs in markets where prices can provide signals. On the basis of the prices of various kinds of labor, materials, equipment, and supplies, the library director can decide how best to provide a specific mix of services within the limitations of his budget. In this sense, the firm and the library can use similar rules for making decisions. But the library cannot follow the firm's rule on what and how much to produce because it does not charge for library services and thus does not attempt to maximize profits.

What decision rules will the library use? Roland McKean has suggested that in organizations not subject to market discipline, decisions are the result of a bargaining process among different interest groups with different and perhaps conflicting objectives.[7a] Libraries are not a highly visible organization and their internal decision-making process is even less visible. Thus we do not know the workings of the decision process, but we suspect that the library director makes most decisions with very little bargaining except perhaps through consultation with professional librarians on his staff. If we are correct,

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[7a] Roland N. McKean, "The Unseen Hand in Government," American Economic Review, Vol. LV, No. 3 (June, 1965), pp. 496-505.

the goals of public libraries as perceived by library directors and the library profession are the primary determinants of the decision rules concerning what and how much to produce. Library directors will make decisions to move towards the goals they feel are the "right" ones for a public library.[8]

A consideration of the goals or functions of public libraries is necessary for the understanding of decision rules of libraries and, as will become evident later, for the economic evaluation of public libraries. We will first investigate the prevailing views in the library profession as to its perception of the goals of public libraries. We will then investigate the functions that libraries actually perform as indicated by the use made of them.

Objectives of Public Libraries: View of the Library Profession

Historically public libraries became associated with a series of social movements, including women's suffrage and the general reformist belief in education and uplift.[9] Their primary role was an educational one--to fight ignorance and thus to uplift people, to develop their capacities, and to refine them. They were to affirm the democratic tradition by serving everyone in the community. By so doing they would counteract special privilege--they would help those who were underprivileged.

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[8]Decisions of Libraries occasionally become visible, such as when there is objection to certain books as being subversive or pornographic. Library decisions will probably come under more public scrutiny as local governments deal with their fiscal problems and with taxpayer revolts.

[9]Ennis, op. cit., p. 27.

Around the turn of the century, the purpose of public libraries, according to Banfield, was clearly to promote the assimilation of European immigrants to the middle-class American style of life.[10] In his view, immigrants were eager consumers of library services. They respected books and wanted to learn quickly the language and customs of their new home. Banfield wrote that there was "a high degree of harmony between the public purposes being sought through the library and the motives and aspirations of its potential clientele."[11]

Times have changed greatly since the turn of the century. Most of the reform movements that public libraries were associated with at that time were successful and ceased to be movements. As a result, the evangelical fervor in support of libraries declined greatly. Other factors, such as rising affluence, reduced inequality of income (compared with that of 1900), and greater accessibility of books through other channels, also undermined some of the push behind public libraries.[12]

We still have poor people--especially in central cities of metropolitan areas--but they present a different problem than the immigrant poor of an earlier era.[13] The present day poor apparently do not possess the motivations of the earlier immigrants for self-improvement and advancement through reading. Making books available in libraries for

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[10]Edward Banfield, "Needed: A Public Purpose," Conant, op. cit., pp. 104-105.

[11]Ibid., p. 105.

[12]Ennis, op. cit., p. 29.

[13]Banfield, op. cit., p. 106.

today's poor will not accomplish the urgent goal of bringing them into the mainstream of our modern economy. Public libraries may not be the most appropriate institutions for accomplishing this goal.

Despite the changes since the turn of the century, the historic commitment of public librarians remains largely unchanged. They still seek to "reach all the people"--to serve everyone in the community. After an extensive study of publications by the American Library Association and after seeking opinions from a sample of over 100 librarians and library officials, Robert D. Leigh concluded that, in briefest terms, the general objectives of public libraries are "to serve the community as a general center of reliable information and to provide opportunity and encouragement for people of all ages to educate themselves continuously."[14] Although Leigh wrote in 1950, numerous statements by public librarians and by the American Library Association indicate that this brief statement of objectives still holds. For instance, the American Library Association states (in Minimum Standards for Public Library Systems, 1966) that their minimum standards describe "the least the citizen living in the last third of the twentieth century has a right to expect from his public library."[15] "It is to be expressly understood that each principle and standard noted in the following chapters applies to all ages and all groups in the community, and that a standard is not achieved if its provisions are meant for one part of the population but not for another. The library which serves only the literate who request service is failing to meet its responsibility just

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[14]Leigh, op. cit., p. 223.

[15]American Library Association, Minimum Standards for Public Library Systems, American Library Association, 1967, p. v.

as surely as the one who provides too few books or makes do with ill-trained staff."[16] Still another statement in the report emphasized the service is for everyone: "The aim of the public library is service to all the people."[17]

Jerome Cushman laments the lack of funds that prevents public libraries from doing more for students, for adult education, for the culturally deprived, and for arousing the interest of nonreaders.[18] He reaffirms the "library faith" in reading for self-improvement. Writing in 1961, Frank L. Schick, assistant director of the Library Services Branch, U.S. Office of Education, approvingly quoted Gilbert Highet as follows: "Indeed, libraries are far more necessary now than benefactors like Carnegie ever imagined, because, in the constantly growing flood of useless and distracting appeals to our surface attention--rapidly written magazine articles, flimsy and fragmentary newspapers, and torrents of talk, talk, talk pouring from the radio--they provide a place to rest, be quiet, step off the moving platform of the moment, and think."[19]

Some librarians recognize that the provision of library service meeting the rather high standards of the American Library Association is beyond the financial means of many poor or small communities. But these

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[16] Ibid., p. 9.

[17] Ibid., p. 27.

[18] Jerome Cushman, "Reflections of a Library Administrator," The Public Library and the City, Conant, ed., p. 130.

[19] Schick, op. cit., p. 9.

librarians generally stick to the belief that high quality library service should be provided to all, and they advocate financial assistance to small or poor communities from a higher level of government to finance high quality library service. David H. Clift and Germaine Krettek wrote that "a further sharing of tax support at the federal level together with greatly increased state and local support seems inevitable if we are to attain the goal in this century of providing all our citizens with library service of quality in proportion to their needs." [20]

Running throughout the comments of public librarians is a strong feeling that public libraries are, or should be, an important agency in the continuing education of adults. This objective originates in the traditional library faith -- "a belief in the virtue of the printed word, especially the book, the reading of which is held to be good in itself or of its reading flows that which is good."[21] In its more ambitious form, the faith holds a "belief in the power of books to transform common attitudes, to combat evils, and to raise the cultural level . . ."[22] More recently, according to Leigh, the library faith "in the mere presence of a community book collection as a power to change people's ideas, attitudes, and tastes is now transformed into a positive program for libraries to guide, stimulate, and promote public use of library materials for educational ends."[23]

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[20]Schick, op. cit., p. 281.

[21]Leigh, op. cit., p. 12.

[22]Ibid., p. 14.

[23]Ibid., p. 19.

These quotations give the flavor of the professional view on objectives of public libraries. To accomplish these objectives, public libraries assemble, preserve, and administer book collections and other materials. But the libraries cannot be passive -- they must also promote the use of their materials and services through stimulating and guiding users. The profession still holds to the objective of providing everyone with a wide variety of good services. It seeks to provide service covering the following areas of knowledge and interest: public affairs and citizenship, vocations, aesthetic appreciation, recreation, information, and research.[24] We shall now examine the available data on library usage to assess the extent to which public libraries are achieving their stated goals.

Objectives of Public Libraries: Inference from Usage

Good information concerning the use of public libraries is simply not available. Since 1930 several studies of library use have been made. For the most part, these studies report only on book circulation. Virtually all of them concern libraries in medium or large cities. No studies exist concerning use in the small town libraries, that is those serving communities with population under 5,000. In fact, very little is known about library use in cities of under 25,000 population. The various studies differ substantially in methods employed, they had varying purposes, they used different procedures, their samples varied widely, questions differed, dates differed, and categories used were not standard. Nevertheless, certain patterns of use show up clearly in all the studies.

By far the best of the studies of library use is The Library's Public by Bernard Berelson published in 1949. This report summarizes

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[24] Ibid., pp. 17-18.

studies made between the years 1930 and 1947, and it reports on a new survey conducted in 1947. Two of the best and most recent studies containing substantial information about users of public libraries are the following: Changing Patterns, a Branch Library Plan for the Cleveland Metropolitan Area, Regional Planning Commission, Cleveland-Cuyahoga County, Ohio, 1966; and Planning for Libraries in Hawaii, State of Hawaii, Department of Education, Office of Library Services, 1968. The previously-cited survey by Bonser and Wentworth (A Study of Adult Information Needs in Indiana, see footnote 2b) gives some information about library use by adults in Indiana. But most of the following discussion relies on the older studies and on studies of cities outside Indiana. These studies, though varying in date and in coverage, tend strongly and consistently to support the generalizations listed in the following paragraphs. The consistency of the findings in these studies suggests that the general pattern of public library usage will hold for Indiana. Eight generalizations seem to be important for our purposes.

I. Public libraries do not serve all the people or for that matter a representative cross-section of all the people. The clientele of public libraries "is a self-selected minority with special characteristics." It includes primarily young people, better-educated adults, and the "culturally alert."[25] According to Berelson, only about one-fourth of the adult population read one or more books per month in 1949; and only about one in ten adults and perhaps one in three children were the real users of the public library in that they used it once a month or more often.

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[25] Bernard Berelson (ed.), The Library's Public, Columbia University Press, 1950, p. 129.

II. School-age children are the predominant users of public libraries. Berelson estimated in 1949 that youth under the voting age probably accounted for 60 per cent of the book circulation of public libraries.[26] Use of public libraries by young people has increased greatly since 1949. Current studies indicate that school-age children constitute about 75 per cent of the users of public libraries. The Cleveland study reported that those under 20 years of age accounted for 76.3 per cent of all users.[27] The Hawaii study reported that nearly 70 per cent of public library use was by persons under 20 years of age.[28] A high proportion of school-age children use public libraries. For instance, 80 per cent of Hawaiian youths in the age group 12 to 20 years said they used the library. The Cleveland study reported a similar figure--80.2 per cent of all children between 5 and 19 years of age had visited a public library in the 6 weeks prior to the interviews.[29]

III. Most surveys show somewhere between 20 and 25 per cent of adults use public libraries. The Cleveland study found that 23.6 per cent of all adults interviewed reported at least one use of their public library in the preceding six-week period.[30] The Hawaii study found

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[26] Ibid., p. 20.

[27] Regional Planning Commission of Cleveland-Cuyahoga County, Changing Patterns-Branch Library Report, August 8, 1966: Official Agency Report, p. 24.

[28] State of Hawaii, Department of Education, Office of Library Services, Planning for Libraries in Hawaii, Honolulu, 1968, p. 45.

[29] Regional Planning Commission of Cleveland, op. cit., p. 34.

[30] Ibid.

that 30 per cent of persons 21 to 44 years of age said they had used the library once within the past 90 days, only 15 per cent of those 45 to 64 years of age claimed use, and only 12 per cent of those 65 and over.[31]

The results of such surveys depend, of course, upon how use is defined and upon the reliability of the response. Virtually all studies have warned that the interviewees tend to overstate use of the library and the amount of reading they do. Berelson reported that only about 18 per cent of adults (those over 21) actually used the public library once a year, and only 10 per cent used the public library once a month or more.[32]

Clearly the circulation of books is highly concentrated among a few intensive users. Berelson estimated that 10 per cent of the borrowers withdraw nearly one-third of all books used within a two-week period, while 20 per cent of the users took out an estimated one-half of all books circulated.[33] During a full year, concentration among a few intensive users is even greater. Five per cent of the total annual borrowers were responsible for about 40 per cent of the circulation, and the top 20 per cent of borrowers accounted for 75 per cent of the circulation. Support for these estimates came from several studies cited by Berelson.

IV. Among adults the proportion actively using the library rises sharply with the level of schooling. Berelson reported that the numerous surveys indicated library use to be about four times as great among college

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[31] State of Hawaii, op. cit., p. 44.

[32] Berelson, op. cit., p. 10.

[33] Ibid., pp. 100-101.

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graduates as among those with only a grade school education or less.[34] The Cleveland study found that library use was rather constant among those with zero to 11 grades of schooling, but tended to rise rapidly with additional schooling beyond the 11th year.[35] Virtually all studies are in agreement that education is an important influence upon use of public libraries.

V. For cities above 25,000 in population, per capita use rises as population declines. This relationship is apparently the reverse for cities under 25,000--the smaller the city, the less the per capita use of the library.[36]

VI. Data pertaining to occupation and income of library users suggest that the bulk of users come from higher status occupations and from middle classes. Berelson concluded that the public library "is pretty much a 'middle-class' institution."[37] The data clearly show that low income groups make little use of public libraries. The very wealthy make little use of libraries because they find it more convenient to buy the books they want. The Cleveland study shows the percentage of users in each income class increasing as income rises to the top category of $15,000 and above.[38] Among occupational groups, students and housewives predominate and are followed by white-collar workers, professionals and managers, and finally the wage earner engaged in unskilled or semi-skilled work.

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[34] Ibid., p. 24.

[35] Regional Planning Commission of Cleveland, op. cit., pp. 38-39.

[36] Berelson, op. cit., p. 42.

[37] Ibid., p. 126.

[38] Regional Planning Commission of Cleveland, op. cit., p. 39.

VII. Book circulation constitutes the major use of public libraries. Little information is available concerning other uses, such as reference, browsing and so on. Scattered evidence suggests that approximately 70 per cent of the individual cases of library use consists of book circulation, and most of the remainder consists of reference and information use. The Cleveland study reported that 67.6 per cent of the young users listed school and reference work as a reason for using the public library; 61.7 per cent gave as another reason personal pleasure.[39] The users could, of course, check more than one reason for using the library. The Hawaii study found that 18 per cent of the use of public libraries was for reference material, 33 per cent for fiction, and the remaining use involved various fields of nonfiction.[40]

Berelson estimated that about two-thirds of the circulation of public library books was fiction.[41] There is considerable evidence that the circulation of fiction has declined in recent years. The University of Illinois index of circulation showed that adult fiction declined from 46 per cent of the total in 1930 to 24 per cent in 1960.[42] The reason for the decline is probably the greater availability of fiction in paperbacks and the rise in popularity of alternative leisure activities.

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[39] Ibid., p. 27.

[40] State of Hawaii, op. cit., p. 47.

[41] Berelson, op. cit., p. 56.

[42] Ennis, op. cit., p. 24.

VIII. Most nonusers of public libraries say they are too busy with other activities or have no need for using the libraries. In the Cleveland survey, 50.9 per cent of nonusers said they had no need for using the library, 44.6 per cent said they were too busy, and 11.6 per cent found their own home libraries were adequate for their needs.[43] The Hawaii study found that 46 per cent of nonusers gave competing leisure activities as their reason for not using libraries. Among these competing activities were movies, hobbies, radio and TV, and reading of periodicals and books at home. Another 20 per cent reported they were too busy with other competing activites such as taking care of children, doing housework, or regular employment. About 15 per cent gave as their reason for lack of any motive -- nothing to look up or just not interested. The remaining 19 per cent gave miscellaneous reasons for not using the library.[44]

A Comparison of Librarians' Objectives with Actual Use

Librarians perceive the public library as providing service to all people, irrespective of income, education, occupation, size of community, and so on. The user statistics, however, show that a small minority of all people actively use public libraries. And this minority is not a representative cross-section of people in our society. It is a self-selected group that is predominantly middle class in economic and social status. Whereas the services of public libraries are available to everyone (at least within the governmental unit that supports the library), most adults do not regularly use them.

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[43]Regional Planning Commission of Cleveland, op. cit., p. 39.

[44]State of Hawaii, op. cit., p. 51.

The user statistics suggest that public libraries contribute little to continuing adult education. In the first place, school-age children account for two-thirds to three-fourths of all users. Even among students, however, much of the use is for personal pleasure and youths drastically reduce their use of public libraries after they finish school.

Berelson doubts that much of the adult use constitutes adult education. Much of adult use consists of reading light fiction -- this is especially true for housewives. The reading of the light fiction of most best sellers generally leads to nothing more than additional reading of light fiction. The educational value of such reading is small. The educational value of the reference use is uncertain. Most reading of non-fiction and much use of reference service undoubtedly furthers the education of the user. Some reference users are simply obtaining specific facts or learning "how to do" something; the educational value of such use is questionable. Although user statistics are simply not adequate for determining the educational value of adult use of library services, our general impression is that the services of public libraries are not extensively used for adult education.

Much use of public libraries by school-age children is directly related to school assignments. The primary issue concerning this use by children is whether the resources required should come from the budget of public libraries or from that of the schools and whether this service should be supplied by, or can be better supplied by, public libraries rather than school libraries. A possible conclusion is that the schools are defaulting

in the provision of needed library services for students. Certainly the library profession does not perceive the primary function of public libraries as that of supplementing school libraries although they do believe that the provision of library materials for children is an important function.

Leigh reported that a small minority of librarians were uneasy about the official statements of library objectives. One librarian felt that the statements of objectives were like party platforms in politics; they are necessary but once adopted they are largely ignored in actual policies and daily operations.[45] Another writer characterized actual policies as user oriented: libraries cater to the needs and demands of users. By contrast, the statements of goals by the profession are supplier-oriented: they consist of educational and cultural functions that librarians would like to perform.[46] If the general objectives persist in a setting where they have little or no relevance to current needs, the public will come to consider them as unrealistic and will reduce their support for public libraries. The gap between official objectives and possible achievement may become so great that the objectives become meaningless, at least to those outside the library profession. When public libraries formed their present institutional arrangements, there were no movies, no phonograph records, no radios, and no television sets. Paperback books were not available while magazines were expensive and were written for a limited clientele.[47]

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[45]Schick, op. cit., p. 24

[46]Herbert J. Gans, "The Public Library in Perspective," The Public Library and the City, R. W. Conant, ed., The M.I.T. Press, 1965, p. 67.

[47]Leigh, op. cit., p. 27.

The library profession needs to reconsider objectives in light of changed conditions of today, to consider what objectives the library might better achieve than alternative institutions or alternative means, to recognize that library services require resources or money, to recognize the limitation on funds available for libraries, to establish priorities among their various services, and to begin thinking about benefits and costs of library services, including the incidence of both. With the increasing fiscal difficulties of local governments, library budgets will be subject to more critical examination. Unless librarians start considering the above issues, they are apt to be in a very weak bargaining position.

The Justification of "Free" Public Libraries

The discussion of what libraries do (or should do) is important in considering the rationale for public provision of library services. This section will start by considering the justification for public action generally and then look at how this justification applies to libraries. The basic question we want to deal with is: Why should libraries be public rather than private institutions?

Library Service as a Public Good--One reason for government or public provision of certain services is that because of the nature of the services, no economically feasible method exists for excluding anyone from the benefits of the services. If the service is supplied to one person, it becomes equally available to all. An example is national defense. If the federal government provides national defense, it cannot exclude individual citizens from the resulting security benefits. The benefits are equally available to all. We call such services social or collective goods. A private business could not supply such services because it could not charge for them--those who refuse to pay could still consume, or benefit from, the service.

Libraries are clearly not a collective good in this sense. It would be possible to exclude people from using libraries unless they paid a charge for doing so. Libraries could be private institutions because the could charge for the use of books and other materials and they could exclude those who do not pay for those services. And private libraries do exist, of course, and they depend upon revenues from charges for their services.

Public goods really constitute an extreme case of declining costs -- once the service is provided for one person, the cost of additional consumption by others is zero. If the marginal or incremental cost of additional consumption is zero, then to restrict consumption in any way is economically inefficient and undesirable. By permitting additional consumption, some people are made better off at no cost to society. Even if the supplier could charge for the service and exclude those who would pay, he would reduce total welfare and misallocate resources by doing so. A private firm, needing to cover its total costs, almost certainly would not provide such a service without charge even when marginal costs were zero. Here would be justification for governmental (public) intervention either by directly providing the service without charge or by subsidizing the private supplier to permit its continued operation even though not charging for the service. In either case, the government would have to raise revenue to finance all or part of the activity.[48]

Declining Costs -- Pure public goods are rare. Most services provided by governments involve elements of both public and private goods. Additional

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[48]Even though the cost of additional consumption of a public good is zero (or low), somehow the public must pay for the good. How the cost is borne is an important question although it is beyond the scope of this discussion.

usage or consumtion of a particular service would rarely involve no increase in cost. But the increase in cost could be small and well below average costs of the service. In this situation a private supplier would undoubtedly charge a price above marginal costs. The result would be an incorrect allocation of resources because some potential users would value the benefit of additional use above the marginal cost.

Some library services may be subject to small increases in total costs with additional use; such incremental or marginal costs may be well below average costs for the services. The existence of this condition could justify public intervention, but not necessarily the provision of the services without charge. Welfare theory in economics suggests charging the marginal cost and subsidizing the activity only to the extent that the return from marginal-cost pricing falls short of total costs. But this subsidization should occur only if the total benefits of a service exceed total costs.[49]

Distributional Considerations-- An excess of total benefits over total costs does not automatically justify a public subsidy. We should investigate the distributional effects of the financing and use of the service; we might decide against a subsidy if the distributional effects are perverse even though total benefits may exceed total costs. We must investigate the financing of the service to see what groups will bear the cost. And we should look at the benefits to see what groups will receive them. We might find, for instance, that although total benefits exceed total costs, the distribution of costs and benefits is undesirable. The costs might fall

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[49]The determination of total costs can be a complex problem. Difficulties arise in determining the cost of existing durable equipment and structures.

more heavily up on low-income groups. In fact, this undesirable distributional effect appears to be what is happening with respect to public libraries. Their financial support comes largely from the propert tax, which is generally recognized as being regressive (taking a higher percentage of income from the poor than from the middle and upper income groups). And statistics concerning library users suggest that the benefits accrue primarily to middle income groups. If this distribution of costs and benefits does actually prevail, there would be a strong case for employing user charges to cover the cost of library services or else relying solely on private institutions to provide library services. In either case, we would follow the principle of requiring payment from those who benefit from the service.

Spillover Benefits--A justification for public support of library services would arise if some benefits of such services would not influence decisions in the ordinary market process. A market process would exist with compensatory user charges for public libraries or with private libraries. The benefits that escape the market process must accrue to others than just the library users--external benefits or spillover gains must accrue to parties not directly involved in library use. The library profession believes that libraries create benefits for the community as a whole, not just for users. Extensive use of public libraries leads to a "more educated community" and a "better citizenry" according to this view. Even though users will be the primary beneficiaries, nonusers will receive benefits and this justifies public support. A similar rationale exists for public support of schools.

The existence of spillover benefits does not, however, justify free library services. It justifies public financing of only that portion of total benefits consisting of spillover or collective benefits. Ideally, individual users should pay a charge that covers the incremental cost of their use. Individuals would then use the library until their marginal private benefits were just equal to the incremental cost of their use. If additional use will lead to social benefits, then only this additional use should be provided free -- but only to the extent necessary to equalize the value of the spillover or social benefits and the costs of this additional use. Ideally this subsidization should be provided just for the library users that yield social benefits over and above the private benefits. The circulation of light fiction, for instance, probably yields little or nothing in social benefits -- the reader captures virtually all the benefits in recreation or entertainment. The ideal user charge is impossible to determine and implement. Nevertheless, some uses of libraries clearly provide little spillover benefit and appear to be amenable user charges.

To assess the importance of spillover benefits, we must again look at user statistics. To what extent does library use result in a better informed and more educated citizenry (probably the primary spillover benefits). Public libraries do provide support for schools, probably by serving as the primary or auxiliary library for the schools. There may be some collective benefits here, but this function has not been among the primary objectives of public libraries. Perhaps we should provide library service for school children primarily through school rather than public libraries. If school libraries are inadequate, perhaps we should shift resources to them rather than to public libraries to provide satisfactory library service for school children.

The limited evidence available suggests that the bulk of adult library use is not educational because it consists primarily of light reading

and finding out "how to do" something. Reference use is not all educational--some of it undoubtedly is simply obtaining information for immediate and practical needs rather than enhancing the education of the user. Thus the available evidence on library use does not support the view that public libraries create important spillover benefits by contributing to the general betterment and education of the community.

Library Service as a Merit Good--Closely allied to the justification based on external benefits is that based on the consideration of library service as a "merit good." A merit good is one for which user charges are feasible and private production is feasible, but for which user charges and free choice by consumers would result in too little consumption as judged by the majority in a community. Elementary and secondary education and perhaps flouridated water might be considered merit goods. Private producers could supply such goods and presumably charge enough for them to cover their costs. But individuals do not consume as much of these goods when they have to pay a price for using them as society beleives they should. Society decides that consumption of these merit goods is so desirable that people must be coerced into consuming more than they would if they made their own choice at a compensatory user charge or even at a zero charge. In other words, society says that people (some people at least) do not realize how much they and others benefit from consuming merit goods and would not consume enough if allowed to make the decision themselves. According to this view, society should not only provide merit goods without user charges but also should coerce people into consuming more of these

goods than they might want to at zero price. Tiebout and Willis suggest that the primary justification for public libraries lies in their being merit goods.[50]

Some analysts prefer to consider merit goods as involving simply a desired redistribution of income. The redistribution is from the taxpayers who bear the costs of providing the merit good to consumers who gain most of the benefits. When the case for public support rests on this argument, the question to ask is whether subsidizing the consumption of merit goods is a better method of redistributing income than alternatives--such as subsidizing the consumption of other items (housing or medical care), increasing welfare grants, or providing cash income supplements.

Conceptually the case of merit goods is distinct from that of goods with beneficial external effects. In both cases, determination of the optimum amount of such goods involves comparing benefits and costs, including their distribution. Difficulties arise, however, in treating library services as merit goods. Society may decide that people should consume more library services because to do so is good for people--it benefits them more than they realize. And society may not charge for library services for this reason. But society does not coerce people to use more library services than they voluntarily choose at a zero price, such as it does for primary and secondary education. Some people who now use public libraries might discontinue using them if they had to pay for the use, but many people do not use them even though there is no user charge. In addition, most users are middle class and are probably not the people

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[50]Charles M. Tiebout and Robert J. Willis, "The Public Nature of Libraries," The Public Library and the City, R. W. Conant (ed.), The M.I.T. Press, 1965, pp. 96-98.

society would want to coerce into consuming more of this merit good. Consequently, our conclusion is that the concept of library service as a merit good provides weak justification for public support of libraries.

One could argue that public support of libraries in fact reveals that society considers them to be merit goods, and that the expenditures on libraries are justified even though the major users are middle class citizens. Tiebout and Willis suggest that such an interpretation is indicated by the services provided by libraries--reader guidance, adult education, group services, and browsing. People would not pay for such services, so society has decided to provide them free because they are good for people. But decisions concerning public support have probably not been based on any rational arguments. Community elites who influence such decisions have simply considered libraries to be good and to deserve tax support without relying upon other arguments for their positions.

Conclusion--This section has examined several possible theoretical justifications for subsidizing public library service. After evaluating these possible justifications in light of actual conditions, they provide little if any support for "free" library service. Rather, the evaluation of the arguments suggests a strong case for employing user charges for the services where such changes could be easily administered.

Chapter IV

HOW CAN WE EVALUATE PUBLIC LIBRARIES?

> Even more important is the recognition of the inevitable limitations that any standards to measure the service that the library offers its public. The ultimate achievements of the public library must remain a matter of faith in the power of accurate information, important ideas, and inspiring works of literary art to give an upward thrust to the lives of the people the library serves.[1]

> To a greater extent than anyone of us likes to admit, it is still true that most of the library's efforts in most communities goes to serve the somewhat marginal needs of a rather small minority of citizens.[2]

Trends Affecting the Position of Public Libraries

For well over one hundred years now, local communities in the United States have undertaken expenditures to provide "free" public library service for their citizens. Public spending for these services currently totals approximately five hundred million dollars per year for approximately nine thousand local public libraries. Per capita expenditures for libraries approximate two dollars per year, up from about one dollar per year in 1955.

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[1] Minimum Standards for Public Library Systems, 1966, American Library Association, Chicago, 1967, p. 14.

[2] Dan Lacy in Leon Carnovsky and Howard W. Winger (ed.), The Medium-Sized Library, University of Chicago Press, 1963, p. 70.

Table 1
Direct General Expenditures of State and Local Governments for Libraries

Year	Library Expenditures Total	State	Local	Cities	Total Expenditures All Functions State and Local Govts.	Per Capita Expenditures Libraries	All Functions
	(In millions of dollars)						
1955	154	7	146	128	33,724	$0.93	$204
1956	187*	*	187	135	36,711	1.11	218
1957	199*	*	199	145	40,375	1.17	237
1958	224*	*	224	158	44,851	1.29	259
1959	243*	*	243	173	48,887	1.38	277
1960	278	17	261	185	51,876	1.54	288
1961	368	19	349	210	56,201	2.01	307
1962	340	20	320	211	70,547	1.83	380
1963	399	22	377	247	75,760	2.12	402
1963-64[a]	401	22	379	242	80,579	2.10	421
1964-65	444	30	414	267	86,554	2.29	447
1965-66	486	37	449	282	94,906	2.48	485
1966-67	535	49	486	316	106,675	2.70	539

*Local Libraries only. Direct state expenditures for libraries not included.
Sources: U. S. Bureau of the Census, Governmental Finances (annual series); Summary of City Government Finances in 1966-67 (Washington, D. C., 1968).

[a]Starting in 1964, data is for fiscal years ending on June 30 and those governmental units with fiscal years ending within that twelve month range.

Although per capita and total expenditures of state and local governments for libraries have increased about one hundred per cent from 1955 to the present, it is important to note that library expenditures have remained a small proportion of total state and local expenditures for all functions, about one per cent.[3] The "fiscal insignificance" of public library expenditures has undoubtedly served to protect and enhance the "halo" effect that public libraries seem to have. Despite the fact that libraries are little used by the general public, the library is still held in high esteem. In other words, most people think libraries are a good thing for other people even though they do not use them personally.[4]

Ninety-five per cent of all public funds are provided by local governments and these funds are obtained in large part by local property taxes. It seems likely that increased pressures on local tax dollars coupled with the desire of librarians to expand library service will raise the question of the contribution of libraries to community welfare and serve to make library's services and library expenditures more "visible" to public scrutiny.

Expenditures have been rising more rapidly for libraries outside the central city than in it. Outside the central city, capital outlays constitute a larger percentage of library budgets as new libraries and

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[3] Leland notes that public expenditures for libraries were 1 per cent of total local expenditures in 1930 and 1.2 per cent in 1960 in The Medium Sized Public Library, op. cit., p. 14.

[4] Bernard Berelson, The Library's Public: A Report on the Public Library Inquiry, Columbia University Press, 1949, p. 124.

branches are being built. Less than three hundred public libraries serve cities of 100,000 or larger; most libraries serve relatively small communities. In Indiana approximately 150 out of 246 public libraries in total serve cities of seven thousand persons or less. Few studies have been made of libraries serving communities of 25,000 people and under.

It is clear that the use of libraries is changing. We have noted above that the use of libraries by juveniles has increased dramatically in the last decade and that adult use appears to be on the decline. Many public libraries have become an adjunct to the education system in terms of use by school children--use of book materials and use of the public library as a place of study and as a social gathering place. Adult and juvenile use of public libraries is strongest among the middle class. The library appears to be a middle-class institution which does not reach the poor. In depressed areas, the library is an alien institution that appears to represent the cultural values of the middle class (usually the white middle class).

An explanation of the changing use, function and fiscal of position public libraries in the United States and in Indiana would need to take into account the major trends affecting metropolitan life listed below:

1. Total population of the United States increased by about 33 per cent from 1950 to 1968. The Bureau of the Census has projected an increase of from 20 to 25 per cent from 1968 to 1985. This growth in population suggests a potential for growth in the use of libraries. There is, however, an offsetting trend in that per capita use of libraries has not increased as rapidly as population. Total library circulation in the United States has been increasing at about 1 per cent per year whereas population has been increasing at about 1.6 per cent per year.

2. More important than total population in influencing library use are various characteristics of the population. One of these characteristics is the age distribution. The following percentage increases by age groups are forecast by the Bureau of the Census (Series D) from 1968 to 1985; 19 years and under, 3.6 per cent; 20-44 years, 42 per cent; 45-64 years, 5 per cent; and over 65 years, 31 per cent. The major users currently are youths 19 and under. The projections call for only a small percentage increase in this age group. At the other end of the age distribution, there is a projected increase of 31 per cent in those 65 and over. Librarians see this group as potential users during their retirement years. But studies generally show a lower percentage of users among this age group than any other. In fact, the Hawaii study showed a steady decline in the percentage of users in the age groups over 19 years.

3. Most of the population growth in the next 15 to 20 years will occur in urban areas and largely in metropolitan areas. Farm population will probably continue to decline, particularly the number dependent upon farming for income. Small towns (3,000 and under in population) are losing population in many instances. In fact, few small cities (say under 10,000) are growing unless they are close to a metropolitan area. These trends are expected to continue. By 1980, about 70 per cent of the population will reside in metropolitan areas, and about 80 per cent will be living in urban places (cities of 2,500 or more). Most small communities that are well removed from larger cities will not grow in population.

4. In the larger cities, and particularly in metropolitan areas, population is not only increasing, but it is spreading out. Very little growth is occurring in the central parts; virtually all of it is occurring at the peripheries. Even though the population of central cities is not changing much in numbers, it is changing in character as many middle and upper income families move to the suburbs to have their places taken by low income families. In the large northern central cities, the replacement families in the central cities are largely black. As a result of these changes, library circulation in central city libraries has been declining. By contrast, the suburbs are receiving large numbers of middle income, more highly educated families who normally constitute the bulk of library users. Another factor of relevance is the lower density of population in the suburbs than in central cities. With a more scattered population, libraries simply cannot be nearby for most people. Thus library users in suburbs are more likely to drive an auto to the library than to walk.

5. Another important characteristic is the educational level of the population. In 1960, 45 per cent of the population over 18 years of age had graduated from high school. By 1980, the figure is expected to be over 60 per cent. By 1980 college graduates are expected to be 85 per cent more numerous than the 8.1 million of 1960. Other things being the same, the higher the educational attainment, the greater the library use.

6. The distribution of the population among occupational classes will also continue to change. We can expect a continued growth of professional and technical workers as the demand for their services grows relatively. Whitecollar workers and non-professional service workers will also increase at a faster rate than the entire work force. Farmers, miners, and blue-collar workers--the unskilled and semi-skilled--will experience relative declines. These changes indicate a growth in the occupational groups that typically have higher rates of library use.

7. Many of the preceding trends suggest substantial increases in library use. Among them are: growth in total population, growth in the numbers 19 years and under, rising educational levels, growing urbanization of the population, and relative growth of professional and white-collar workers. But there are some opposing trends as well. Family incomes are rising and will continue to do so. At a given point in time, we notice that middle income groups use libraries more than lower or higher income groups. But over time, the middle income families apparently use libraries less as their incomes rise. With more leisure time (longer vacations and shorter work weeks) and rising income, many of these families are apparently increasing their leisure activities such as listening to records, watching TV, camping, and engaging in other outdoor activities. The income elasticity of demand for these competing leisure activities is high, while it is low for library use. In addition, these families probably tend to buy more of the books they read--especially paperbacks--rather than rely on the public library. These income effects appear to be the most probable cause of the per capita decline in library use, and they appear to be stronger than the forces mentioned above that would lead to a rise in per capita library use.

8. The fiscal position of American cities is worsening relative to other levels of government because of revenue inflexibility and rising expenditure needs. The property tax will come under increased attack as a major source of municipal revenue. It is likely that cities will have to turn increasingly to other sources of revenues (i.e., user charges) to meet the increased public expenditure needs of the future.

9. The rapid rise in the publication and widespread distribution of paperbacks has provided the book reader with a wealth of inexpensive reading material almost inconceivable twenty-five years ago.

10. The other agencies of mass communication are expanding and are reaching much larger segments of the population with more frequency and with more regularity than are public libraries. This trend has been accentuated by the extension of television in the last two decades.

11. The marked increase in student use of public libraries is one of the major developments in the past two decades. This trend raises the question of whether the public library is more of an educational adjunct than a communal resource and whether schools and public libraries should each continue to go their separate ways.

Indiana Trends

1. Rural populations are likely to decline in Indiana.

2. The economic future of many small towns in Indiana does not appear bright. However, growth of medium and large-sized Indiana cities is likely to continue at the same rate as in past decades.

3. Indiana is not likely to become a state with rapid economic growth or high per capita incomes. It seems likely that the fiscal position of Indiana will remain tight over the next decade (perhaps longer) with many unmet public expenditure needs and a shortage of state and local revenues.

Why Evaluate Public Libraries

It appears that this is an especially opportune time to initiate an economic evaluation of the services provided by public libraries. Despite the fact that public libraries in the United States have occupied a long, distinguished position in the array of public services provided by local governments they have been subject to remarkably little economic scrutiny.

We are not aware of any previous attempt to perform a benefit-cost analysis of public library services. It is evident that the economic evaluation here will not be complete as we would like. Very little data exists on the amount of library use so that benefit estimation is most tenuous. Instead, our study is to be regarded more an an experimental and exploratory attempt at benefit-cost analysis of public library services.[5]

Nevertheless, libraries absorb valuable inputs in terms of labor, capital facilities, book materials, and land. In turn, libraries can produce an array of educational, informational, recreational, and cultural services. Efficient public policy would require that the benefits or gains from these services exceed the costs of providing the services. The comparison of resulting benefits and costs is essential if prudent public expenditure policy is to prevail.

Moreover, it is important to know the distribution of the benefits and the costs among the various groups in the local community. Knowledge about the distribution of benefits and costs is often as crucial from the standpoint of public policy decisions as the size of benefits in relation to costs. For example, it could well be possible that current methods of financing public library services, such as the property tax, place relatively heavy burdens on lower income classes in a community. Yet, an examination of the distribution of the benefits might disclose

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[5] After this was written a book by Jeffrey A. Raffel and Robert Shishko was published. See: Systematic Analysis of University Libraries: An Application of Cost-Benefit Analysis to the M.I.T. Libraries (Cambridge, Mass., The M.I.T. Press, 1969).

that they accrue in large part to a minority of the community who have above average incomes and who are already better educated and more culturally alert than the average taxpayers.

These kinds of economic evaluations can help us decide what we want our public libraries to do and how much library service of what kinds do we want to provide. It should be emphasized that benefit-cost analysis, like all analytic techniques, is not the decision nor, is it infallable or a substitute for judgment. At best, an economic evaluation is a helpful guide to a decision.

The fact that public libraries are subject to a number of new trends and conditions, when all sorts of new decisions will have to be made about the nature and extent of public library services, make a benefit-cost analysis especially timely. It is clear that libraries must be reappraised in terms of changing goals, needs, urban locational trends, changing clientele and new pressures on metropolitan public financial resources. It is fortunate also that interest among economists and public officials in the application of benefit-cost techniques (implying enumeration and evaluation of relevant costs and benefits) is increasing. Although benefit-cost techniques have not been previously applied to library services, they have been used in a wide variety of fields--water supply projects, transport, land usage, education, research and health. The time appears ripe for a re-examination of the public library. It seems possible that a systematic attempt to evaluate benefits and costs can provide valuable help in shaping public policies for public libraries.

Our study is aimed primarily at public libraries. However, it should be clear that many of the generalizations and much of the economic analysis would apply at least in part to all types of library services (academic, school, company libraries and various special collections).

The "Requirements" Approach

Despite the apparent justification for benefit-cost analysis of public libraries, a large part of the library profession tends to disparage attempts to do quantative research on the benefits of library service. It is said that library service is too subjective and too subtle to quantify. The library benefits are educational, informational, recreational and cultural; they are believed to accrue to library users and to the public at large. As Berelson points out, the problem is not one of quantification per se. The important research question is how to define and to document these effects.[6] We have not yet progressed very far in our attempts to measure benefits from library service despite widespread and continuing assertions that these benefits exist and that they are worth the costs.

An example of the distrust of quantitative attempts to come to grips with the measurement of benefits is found in the discussion of the use of standards for library services by the members of the Public Library Association. The Association consciously discourages the collection of user figures and adopts a "requirements" approach as opposed to more systematic attempts to measure gains in relation to costs:

> Only such standards have been included as have a direct and positive relationship to the quality of library facilities and services. Measurements that are quantitative but not, in fact, qualitative have been excluded. Thus the usual percentage figures for registration of readers have been omitted on the grounds

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[6] Berelson, op. cit., pp. 114,120.

> that mere issuance of borrowing privileges does not bear a reliable relationship to service rendered. Nor have per capita circulation figures, commonly included in earlier standards, been given since they provide no evidence of the quality of the books borrowed, nor whether the books circulated actually met the needs of the borrowers.
>
> The specific standards, taken together, constitute the base line of the modern public library service to which the people in every community are entitled. In substance the standards are the essential elements found in those libraries that have found a reasonable degree of adequacy.[7]

Several observations seem pertinent to the position taken by the Public Library Association. We can agree that registration figures on library card holders and book circulation figures are pretty crude measures on library use and even more tenuous indicators for library benefits. Yet, it does not seem to help matters to recommend against keeping such quantitative benchmarks. Crude as they are, circulation and registration figures do provide at least some clues as to library usage which in turn can at least point toward identification of possible beneficiaries. Not to have such information is to throw away valuable knowledge about library use and cause us to rely even more on rhetoric and assertions.

What is needed are more and better quantitative measures, not fewer. That is to day, we would like to have circulation figures by socio-economic characteristics of borrowers and, in turn, better figures on what kinds of books and library use are made by each of the several

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[7] Minimum Standards for Public Library Systems, (1966), op. cit, p. 13.

different kinds of library publics. With such detailed use of figures, it would then be possible to calculate or infer a great deal more about social and private benefits. The attempt to make systematic assessments of library benefits will continue to be abortive until such kinds of data are available.

To the extent that recreational, educational, cultural and informational users can be identified it would be possible to place investments in public library services in perspective with alternative ways of providing the same or similar benefits to the various user classes. The benefits of particular kinds of library services would then be worth no more than the cost of producing equivalent or similar services by alternative means. For example, if we can identify a certain part of the educational service of public libraries, we can put a ceiling on the value of these benefits by saying that these educational benefits can be worth no more than the cost of producing a similar amount of education by alternative means. By similar devices economists have succeeded in dealing with such intangible values as beauty and aesthetics stemming from particular public investments. Of course, the comparisons of alternative costs as a measure of benefits places only a ceiling on the benefits. Benefits, in fact, may be worth less than the costs. A common "trick" in benefit-cost analysis, when one is attempting to justify a questionable project, is to use a more costly (but non-economic) alternative as a measure of the benefits.

We understand that libraries are now collecting fewer statistics on registered borrowers and types of books circulated than they did ten years ago.[8] Of course, the collection of use data is expensive and time-consuming. It is also frustrating to collect and maintain data on library use that is never used. We would hope that the extension of modern data processing methods and computerized equipment would make it easier for statistics on use to be assembled. In addition, it would be hoped that economists and other social scientists would be able to make use of the data to make the first real assessment of the private and social benefits of library use. With the collection of better use statistics it would be possible to take samples of borrowers and determine their socio-economic characteristics, their actual book uses, their residential locations and a whole host of factors essential in the determination of library locations, collections, operating policy and scale of investment.

In this connection it can be pointed out that statistics on the use of libraries for reference purposes are practically non-existent. A few libraries do keep records on telephone and mail requests for information. But, data on in-library reference use is not available, perticularly for the user who finds his own material without consulting a

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[8] A decade ago it was common to see library circulation broken down into such categories as "adult-juvenile" and "fiction-nonfiction." Admittedly, these were quite crude categories for trying to estimate social and private benefits from use. Yet, most libraries have stopped collecting these types of use figures and now simply report gross total circulation.

reference librarian. It is commonly believed that the informational function of a public library is an important one. Moreover, the informational function is one where the case for public subsidy is quite strong (as we have noted above, the case for subsidizing the reading of light fiction is weak). Clearly, we need to devise measures of use of reference facilities so that more concrete estimates of social benefits can be made.

Equally important, but perhaps less difficult to do, is the need to estimate incremental costs for the performance of difficult types of library services so that benefits can be compared with costs. Knowing either benefits or costs alone is insufficient for making optimal public expenditure decisions.

The final observation here on the position taken by the Public Library Association is to question the notion that the way to evaluate a public library (aside from the assertion that it is all a "matter of faith") is to employ standards of inputs devoted to library service as means to evaluate library performance. The employment of standards or requirements as a measure of benefits is, of course, not just endemic to the library profession. Most professional associations endorse the establishment of standards (e.g., so many doctors or acres of park land per capita). In fact, the "requirements" approach is used throughout government. Yet, the employment of such standards either as measures of benefits or as means to evaluate library services and thus to determine the most desirable kind and level of investment is fraught with serious dangers and difficulties.

Our major criticisms are not with the fact that the Public Library Association has set the standards "too high" or that they are not "realistic" for small town libraries. Such criticisms can be made. For example, the standards are set for communities of 150,000 people and above and recommend:

1. The headquarters should contain at least 100,000 adult non-fiction titles as a basic collection.

2. The total system collection should own resources of at least 2 to 4 volumes per capita, and at least 2 volumes per capita in areas serving 1,000,000 population.

3. Up to 1/3 of the volumes should be added yearly for children.[9]

Little consideration has been given to the needs and resources of small towns. This was pointed out by Berelson in 1949 and is still true some twenty years later.[10]

Nor, are our major criticisms aimed at the observation that the standards offered by the Public Library Association appear to be pre-occupied with the role and services public libraries performed in the 1930's and 1940's with little recognition of the changing use trends and the changing social and economic environment within which the public library now operates. For example, there is little recognition of the fact that central city circulations are often declining and that central city branches generally do not meet the needs of the inner-city poor. There is also little recognition of the fact that many surveys now disclose that often seventy to eighty per cent of library use is by

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[9] Minimum Standards for Public Library Systems, (1966), op. cit., p. 13.

[10] Berelson, op. cit., p. 143.

persons 19 years of age and under. Perhaps some more thinking needs to be done to redefine that nature and purpose of public libraries in the light of changing technological and socio-economic conditions.

Instead, our major criticisms of the employment of standards are two-fold: 1) the standards are drawn up independently of costs and, 2) the standards imply that output can be measured by counting inputs.

In regard to the first criticism it is clear that costs are given little or no explicit consideration in the establishment of needs, requirements and standards. The Public Library Association asserts as its first standard that "Public Library Service Should Be Universally Available."[11] Obviously, to make public library service of good quality (of all kinds) equally available to all would be an extremely costly undertaking. An effort that could well cause us (if we were to take the standard seriously) to spend nearly as much on libraries as we are currently spending on medical care or other public or private important services. In regard to a particular standard, how can we decide whether or not to supply at least one published periodical title for each 250 people in the service area independently of the resources to be sacrificed in order to obtain this standard?

It is interesting to note that nowhere in publications dealing with library standards are cost estimates provided which might give some clues as to the costs of meeting any of the specific standards. It is abundantly clear that communities have scarce financial resources and many unmet needs (the same is true for the nation as a whole) and that standards cannot be set independently of the costs of attaining

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[11] Minimum Standards, p. 10.

them. It is also evident that there are always alternative ways and alternative routes to achieving particular goals and particular kinds of social benefits. It would be wrong to assert that public libraries are the only ways to achieve some of the social benefits associated with libraries. Cost calculations are thus needed not only for library services but also for achieving similar or equivalent benefits in alternative ways.

The second major criticism of the use of standards is that they tend to cause us to count inputs or materials or expenditures as measures of library benefits. The output of a library is determined by the use of the library not by the number of books, librarians, square feet or expednitures per capita. It is incorrect to measure output by counting inputs. The counting of inputs and then determining their costs is, indeed, an important task, but it is no substitute for genuine attempts to measure and to evaluate output. Library benefits are, of course, no easy things to measure. They are multi-dimensional; they may involve several publics. Counting inputs can be done in relatively simple fashion. Yet, it is better to try to measure difficult things than to concentrate all of our efforts on an easy, but relatively uniformative, task.

What Berelson says with regard to the need for research on the social benefits of the public library would appear to apply with equal validity to the whole range of the production of library services:

> That there are social effects of library service no librarian would deny, but the attempts to define them, much less document them have not progressed far. Assertions that the public library is effective in developing an "informed citizenry," or in widening opportunity within the community, or in promoting

> democratic values are a part of the standard rationale for the public library, yet little systematic study has been devoted to such basic functions of library practice. The public library is supposed to minimize political apathy within the community, and yet we do not know whether it does. The best hypothesis from current investigations is that the public library never gets a chance to influence the apathetic, because it never comes in contact with them. To what extent is the public library really used as a major source of political and social enlightenment? Again, the best hypostheis is that adult borrowers of political materials from the public library are reading books deliberately selected to reinforce and buttress their already existing opinions and prejudices.[12]

The Absence of the Price Mechanism

In recent years, governmental units have become more and more concerned with quantitative analyses of alternative public policies open to them. A large body of literature now exists on the evaluation and "systems" approaches to public investment decisions. The techniques of benefit-cost analysis, program budgeting, systems analysis, cost-effectiveness analysis and operations research are beginning to be employed as tools for aiding public expenditure decisions. There is a great deal to be learned before these techniques can be extended and applied to the entire range of public production. The information needs of these new techniques are formidable. Yet, the trend toward greater use of quantitative techniques is a response to a very great need to achieve greater efficiency in the public sector as it grows.

Competitive market pressures for efficiency characterize much of the private production of goods and services but are largely absent in the public sector. As a result, substitute devices have to be employed to decide how to allocate resources among public functions and to evaluate performance.

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[12] Berelson, op. cit., pp. 121-122.

It is useful at this point to see the implications of the lack of a price mechanism and its effect on the financing, production and distribution of library services. We are not sure that all of these implications have been fully appreciated. It is possible, therefore, that re-examination of public library investment and production might include recommendations that the user charges should be given some consideration for the financing and distribution of library services.

In the private sector of our economy we look to the forces of competition, to the lure of profits and to the threat of losses to cause private firms to seek out efficient methods of production and profitable innovations. The prices paid by consumers serve as ballots in a continuing referendum on what to produce, and the resulting profits and losses determine what firms survive. Firms who make inferior choices tend to suffer losses. They must either respond positively to market forces or be eliminated.

In most kinds of public production there are few such forces. The burdens of cost do not fall on those who make decisions. Incentives to be efficient and to seek out new markets, new methods of production and innovations in the mix of services provided are weak. True enough there is competition between political parties and candidates for office and there are pressures by taxpayers to keep budgets in check. Yet, there are no forces which are comparable to operations of a competitive market to insure efficient use of resources by public agencies and to insure optimal allocation of resources to the public sector.

It is impossible to levy prices for many kinds of public production, e.g. "pure" collective or public goods where the service is consumed collectively and where it is impossible or very costly to exclude people who do not pay user charges. Lighthouses, police protection, and national defense are examples of such "public" goods. For libraries, however, it would be technically possible (and not very costly) to levy user charges on books borrowed and to charge fees for library cards.

The justification for the failure to employ user charges to cover all or part of the costs of library services, the failure to employ user charges to register consumer demands for services, or the failure to employ user charges as prices to equate (and to ration) the quantity of service demanded with the quantity supplied must be sought on either or both of two grounds: the existence of external public benefits or the desire to redistribute income to library users.

One justification for not employing user charges and for using general tax resources to pay for library services is that we might believe that there are external public benefits stemming from library services that accrue to the community at large above and beyond these private benefits accruing directly to individual users. For example, educational and informational benefits to individual library users could well "spill-over" and constitute public benefits. In so far, as the public portion of the benefits are perceived it would be "efficient" to require general public support of library production. Note, however, this would not necessarily mean that library service would have to be supplied free of charge to the individual user. A proper user-charge to the consumer would equate incremental private benefits to incremental costs, with extra consumption and production being justified by the collective

portion of benefits being subsidized by general taxes.[13] Note also that some types of library services would tend to have benefits that were more "public" in nature than others. For example, the reading of light fiction by middle-income housewives may confer little benfit to the community at large. Thus, the case for public subsidy of this kind of library service would have to be made, if at all, on other grounds.

A second justification for the subsidy of library services might be that we simply wish to redistribute income from the taxpayers who bear the costs to the library users who gain most of the benefits--a redistribution of income in the form of a subsidized service rather than a direct redistribution in the form of money incomes. This sort of redistribution policy could be a rational and conscious decision if information were made clear to the public and to library decision-makers that such a policy was, in fact, what we wished to do. Then, of course, we would need to compare this method of income redistribution with alternative ways to redistribute income, e.g. the provision of subsidized housing or medical care or the employment of welfare grants or negative income taxes. There may also be alternative ways of achieving the external benefits discussed above.

We suspect, however, that the redistribution of incomes that results from present library pricing and financing policies is not the

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[13] In some cases the external or collective benefits might be satisfied by the first amounts consumed so, <u>at the margin</u>, the benefits received may be largely private or individual in nature. As a result, we must be careful to distinguish between "all or none" decisions and those involving little more or a little less consumption.

outcome of rational decision-making choice. The literature on libraries is not very informative on quantitative measurs of benefits--be they public or private in nature. Nor, has the literature made much study of the distribution of benefits and costs. Our preliminary judgment at this point is that the nature of library financing by local communities (the property tax) is probably income regressive (heavier relative burdens on low income groups). Also, the users of libraries appear to be largely middle-income groups. So, the redistribution that apparently takes place is redistribution that 1) has not been carefully studied and made known to library decision-makers and 2) is probably regressive in its net incidence.[14]

Three major pruposes or rationale can be used for the employment of user charges for library services: 1) Equity--it is "fair" to charge beneficiaries and not force the general public or non-users to bear the burden. The "fairness" of a user charge is directly related to who the beneficiaries are and whether we do in fact want beneficiaries to pay. 2) Revenue production--most levels of government are strapped for funds and user charges can be used to supplement other revenue sources. Some of the important questions here are the possible efficiency and distribution effects of user charges versus efficiency and distributional effects of alternative forms of governmental revenues (e.g. property taxes). The more limited are other revenue services; the more attractive will be user charges. 3) Efficiency--user charges can promote efficiency in the use and production of library services.

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[14]This view may not hold with equal force for the use of libraries by schoolage children from low income families.

There are, in turn, two kinds of efficiency arguments that can be employed as rationale for user charges for library services: long-run efficiency and short-run efficiency. The long-run efficiency argument for user charges is their role in promoting the proper scale and levels of new investment in library service. By contrast, the short-run efficiency rationale concerns the use of prices to ration service and to equate the quantity demanded with the quantity supplied from existing facilities. If the marginal costs are low, prices should be low to encourage additional consumption. At zero prices it is quite possible that the amount of a service demanded may exceed the quantity supplied so that some form of rationing is required. This can be done by charging prices, by use of "first-come-first-served" principle of queuing, or by administrative devices.

Taking the short-run efficiency argument for user charges for library services first, it is not clear what sort of a rationing problem libraries really have. It appears from that data analyzed in the following chapter that the average incremental costs of circulation for public libraries in Indiana range from 25 cents to 50 cents for each book circulated. Yet, we can find little direct evidence that the quantity of library services demanded (as measured by circulation relative to book stock) exceeds the quantity supplied. True enough, individual librarians may be overworked and underpaid. There is also some evidence to suggest that limits of seating capacity are approached when school students use the public library as study hall or as a place to write term papers. The facts at this stage of the study (we could be proved wrong) do not indicate that the use of existing library facilities in many areas tends

to approach capacity or that a severe rationing problem exists. Despite many assertions that public libraries are straining to meet heavy demands, we can find little "hard" evidence to support such widely publicized statements. Therefore, it would appear that the case for the employment of user charges for rationing purposes is not clear-cut.

However, it could be argued that failure to charge borrowers with average incremental costs of something in excess of 25 cents per book borrower is still a short-run efficiency problem. If, indeed, users are charged zero prices where marginal costs of borrowing are 25 cents per book, it could be argued that waste will take place. Waste could result if the marginal benefits received by users were less than the marginal costs of book bortowing. Services tend to be used in accord with the price tags they bear. Books priced at zero cost, the argument says, would attract users with a low evaluation for using books. Misuse could occur if low-valued users crowded out users with high evaluations. The lack of a price signal might cause misuse of library services and misallocation of economic resources.

The efficiency of user charges for promoting long-run efficiency is based upon their role in helping to determine optimal scales and levels of public investment. It is our belief that the absence of user charges for public library services makes it very difficult to measure benefits and to demonstrate what the proper level of public investment in libraries should be. The role of prices vis-a-vis long-run efficiency is two-fold: 1) the "discipline" effect and 2) the "information" effect.

It is argued that the fact that users of public services will be charged will provide some "discipline" on the claims of benefits and will force these beneficiaries to consider the benefits and costs (charges)

in relation to alternative uses of their resources. It is simply a fact of life for public production that beneficiaries always that someone else pays. If the burden of costs cannot be shifted, there will be less tendency to "puff" claims of benefits and the amount of investment in public production will be more nearly correct. When the discipline of the market is absent, there may be serious problems of how to obtain responsible public investment decisions. We lack measures to reward good decisions and to penalize poor ones.

The "discipline" argument appears to be powerful for many types of public production, but as far as public library use is concerned it is evident that it needs modification. By and large, the pressures to expand and extend library services do not come from the general public nor do they appear to come very strongly from the most active library users. Our reading of the literature and our own survey of Indiana business firms and Indiana households all show similar results. In general, the public is generally apathetic about libraries and there is little general feeling that public library service is in great need of expansion. Apparently libraries are not like the case of the "park-barrel" water projects where local landowners or irrigators have a great deal to gain by federal subsidy of local flood control and irrigation projects.

It is true that libraries are generally thought to be good things (the "halo" effect), but the strength of this feeling is most strongly concentrated among the minority of "culturally enlightened" adults of the community who use the library and among similar adults who do not use the library but still think libraries are good things. Berelson found evidence to suggest that these "elite" types may have a disproportionately large influence in the community compared to the average citizen. And

that, to some extent, the decisions to maintain or expand public library service in many communities represent decisions by the "elite" that the general public "needs" library service even though this public makes very little use of the service.[15]

There is also evidence to suggest that another source of support for the extension of public library services comes from the librarians themselves. Librarians as a group believe very strongly in the public library as an institution. Almost without exception they <u>really</u> believe that <u>everyone</u> should have good library service. They hold to this belief despite the fact that few people use libraries, that there are alternative ways to produce benefits claimed for libraries, and that provision of library service is costly. Garceau chided the library profession a number of years ago for being given to too much idealism, oratory and flag-waving about the value of library services to the community, the nation and the maintenance of the spirit of democracy. He urged them to take more part in practical politics and to exploit more fully certain political relations:

> What libraries might do more effectively than they have done is to relate their community activities more closely to political reality. They will profit by constantly re-assessing the value of community groups in a rapidly changing and intensively competitive political scene. Many librarians in our sample are vaguely aware that their group ties are no longer most effective, but they undervalue the importance of this lack of the political acumen to understand and rework the problem.[16]

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[15] Berelson, <u>op. cit.</u>, Chapter II, "Who Uses the Public Library".

[16] Oliver Garceau, <u>The Public Library and the Political Process</u>, Columbia University Press, New York, 1949, p. 149.

As a spokesman for public libraries, the American Library Association has long engaged in promotional activities. Garceau's study of the ALA probably needs updating, but it is clear that it has played an important missionary role in promoting the view that public library service should be expanded:

> Although in our thinking it is not central to the profession's associational life, the federal lobby has nevertheless had a unique value for the profession as a whole. While ALA has had for many years a low batting average in Washington and a membership which is still not overwhelmingly interested in turning out to see the game, a small group in the profession, informed by a steadily maturing understanding of the national political scene, has produced a remarkable sense of studies, surveys, analyses, and plans. They have maintained an unusual flexibility in goals and tactics. The leaders of the campaign, for a period of twenty years, have shown steadfast devotion to an unselfish cause. For they have been, in almost every case, men and women with nothing to gain personally from the program they were developing. They were big-city libraries, professors in library schools, ALA staff members, government officials, whose personal library shops would be among the last to benefit from Federal aid to rural library extension. They were the people who believed that Americans should have more complete and more equal educational opportunities. For all the internal tension, the inactive membership, the retreat to diminishing claims for Federal aid, the disappointments on almost every front, the ALA has, in these leaders of its pressure politics, lived up to the high standards of a profession. Through professional association librarianship in its thinking has been successfully projected beyond the local inadequate units of public library service.[17]

Coming back to the "discipline" effect of user charges it seems more likely that the discipline that is needed is not really so much a discipline that is needed is not really so much a discipline on library users per se, but, instead, a means to "discipline" the claims of strong

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[17]Garceau, op. cit., pp. 199-200.

believers in public libraries who appear to constitute a special interest group--mainly the community "elite" and the professional librarians. Of course, if it can, indeed, be demonstrated that libraries do or can confer large private and social benefits in excess of their costs the case for extension of library services would be on sound grounds. At present the case appears to be based largely upon faith, zeal and rhetoric.

Granting for the moment that a solid case for public libraries might be made, we would still have the problem of "educating" the public on the value of libraries and getting the public to actually use them. At this point, we could well ask how this might be done. If the public is reluctant to use public library services when they are subsidized and are already "free," what further steps would be necessary to stimulate library use? We do require compulsory attendance in schools until age 16 or 18, but it is not at all clear that the logic of compulsory education has much direct carryover to increasing the public use of public libraries.

The effect of user charges as a "discipline" effect would probably be to reduce library use to some level of below current use. We do not know much about the elasticity of demand with respect to user charges. It would be possible, however, that the user charges might provide libraries with <u>additional</u> financial support. In these circumstances, it would be plausible that library service could be improved and this, in turn, might <u>stimulate</u> library use.

If the effect of user charges would be (were thought) to reduce library use, we could expect that strong opposition to such price policies would be forthcoming from professional librarians and other library supporters.

After all, their energies have been largely concerned with missionary efforts in promoting and extending "free" public library service. However, it could be pointed out that the case for continued public subsidy would have to be supported and documented on one or both of two grounds: 1) the existence of external public benefits or 2) the desirability of redistributing income by this method. To the extent that some part of the benefits of library use are private in nature the beneficiaries should be willing to pay the incremental costs. If it were to turn out that beneficiaries were not willing to pay at least some part of the costs of privately received benefits, and if library use did fall as a result, "believers" in public libraries would be hard-pressed to decry the results (apart from an out and out case for income redistribution).

It seems apparent that questions can be raised about whether the public expenditure decisions for libraries do reflect adequately the wishes of the general public. At this stage it is not clear to us who the library decision-makers actually are. However, a suspicion exists that library decision-makers make decisions for libraries by processes which may not reflect very strongly the preferences of the general public, the taxpayers and the beneficiaries. A classic description of this kind of problem was made by Margolis in his discussion of the difficulties of estimating demand functions for public goods:

> The consumers of the goods are not the purchasers; the purchasers are a mix of elected and appointed officials who pay with revenues; the taxpayers may not be users of the services and the decision-makers may be neither taxpayers nor users. Observations on prices or quantity are rare; costly surveys are

> often necessary to tell us who uses the services; and the handful of studies on who pays for the services are highly oversimplified. Not only are there several steps between the consumer and the payer, but often the consumer may not be part of the political constituency which is doing the paying.[18]

Closely related to the "discipline" effect of user charges on long-run efficiency (the proper scale and level of investment) is the "information" effect. That is, the application of user charges can provide decision-makers with valuable information about benefit functions for public services. Provision of services at zero prices and failure to require cost-sharing from beneficiaries makes it extremely difficult to estimate benefits received by users and to make careful project evaluations. McKean has argued that admission charges supply important information about the nature of public demands, and they might be justified on the grounds of being the cheapest way for decision-makers to gain information about marginal evaluations by consumers.[19]

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[18] Julius Margolis, "The Demand for Urban Public Services," in Perloff and Wingo (eds.), Issues in Urban Economics, Johns Hopkins Press, Baltimore, Md., 1968, p. 536.

[19] Roland N. McKean, Public Spending, McGraw-Hill, Co., Inc., New York, 1968, p. 73.

In the absence of a marketing process, there is needed an alternative method to reveal whether or not people prefer this use of resources versus alternative types of public or private production. The political process may do this job in part, but often very imperfectly.

Just how difficult it is to estimate benefit functions in zero-price cases is not usually appreciated. Yes, there does exist some literature on the problem of how to get the public to reveal preferences, but the empirical problems of benefit estimation in zero-price situations are quite formidable For example, suppose we have some revealed behavior on library circulation at zero-price in an attempt to quantify some of the benefits of a public library. If the circulation is Q_1, we have to decide first whether to place it as point A or point B on the diagram on the next page.[20] But, then, how do we generate some sort of demand curve as a basis for benefit estimation? Unless we have another point, it is clear that we have little notion of the area to be measured and that points A and B could be consistent with an infinite number of demand functions (e.g., $Demand^1$ versus $Demand^2$). Benefit-cost analysis of public services supplied at zero prices is an incredibly difficult task, even when we have acceptable measures of the output unit. Revealed behavior at zero-prices is extremely difficult to translate into meaningful private benefit functions.[21]

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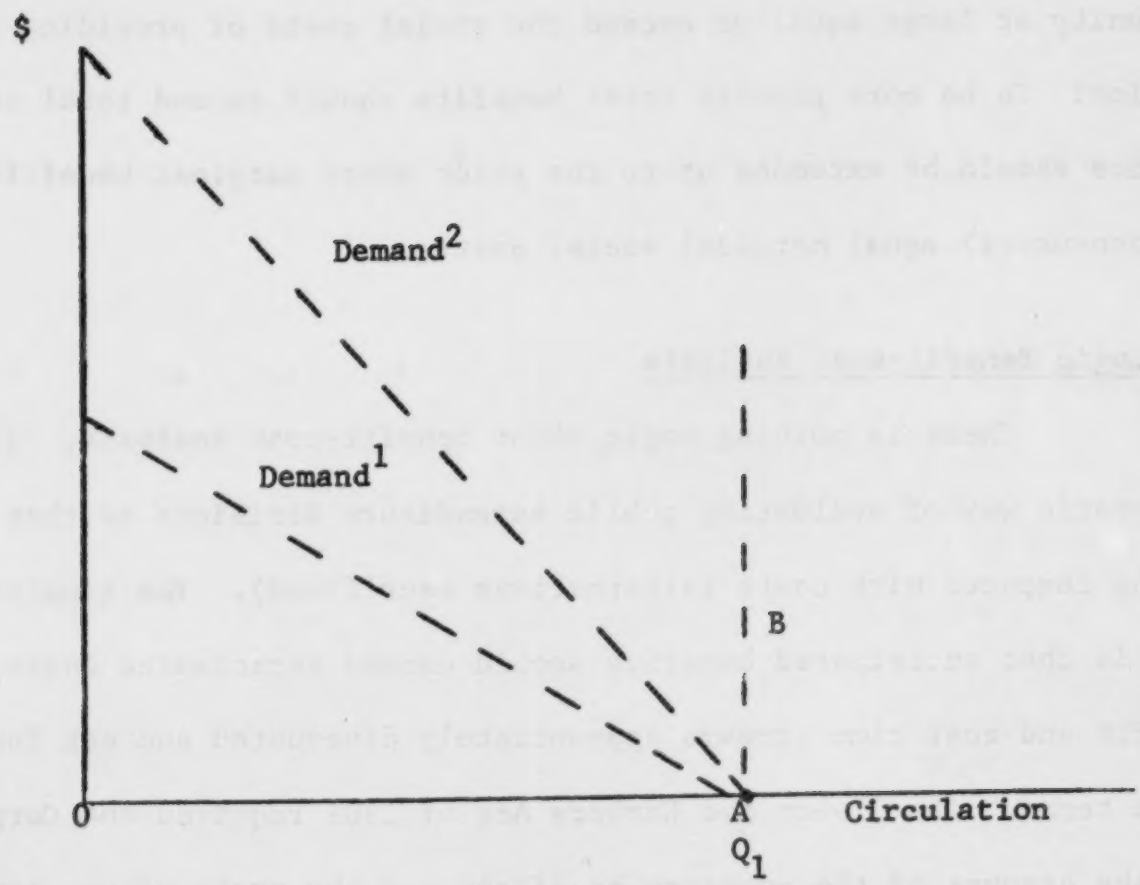
[20]Point B would depict the case of some form of non-price rationing.

[21]User charges would allow us to estimate the demand curves of direct beneficiaries but not of indirect beneficiaries.

Figure 1



This section has shown the provision of public library services at zero prices so users can create problems of how to ration library services among users in the short-run where the quantity demanded may exceed the quantity supplied. In addition use of zero prices presents problems of how to estimate consumer preferences and to estimate benefits functions so that optimal decisions can be made about whether to expand, contract or change the scale and mix of investments in library capacity. Without user charges, alternative methods would have to be devised to substitute for the "discipline" and "information" effects of prices. The absence of the "profit lure" and a market-mechanism create problems of how to reward good decisions and penalize poor decisions for library investment and library operation. Greater knowledge about how library decisions are actually made is clearly needed as a basic step to the quest for seeing how to devise means for measuring and improving the performance of public library service. The overriding question still remains, do

benefits as seen by individual users plus social benefits received by the community at large equal or exceed the social costs of providing public library service? To be more precise total benefits should exceed total costs and the service should be extended up to the point where marginal benefits (for users and non-users) equal marginal social costs.

The Logic Benefit-Cost Analysis

There is nothing magic about benefit-cost analysis. It is simply a systematic way of evaluating public expenditure decisions so that benefits (outputs) can be compared with costs (alternatives sacrificed). The simplistic decision rule is that anticipated benefits should exceed anticipated costs, with the benefit and cost time streams appropriately discounted and set fourth in present value terms. The Rivers and Harbors Act of 1902 required the Corps of Engineers to take account of the commerce benefited and the costs of construction. The Flood Control Act of 1936 authorized Federal participation in flood control projects "if the benefits to whomsoever they may accrue are in excess of the estimated costs." Since that time many types of public investments have been analyzed and many types of techniques have been devised.[22]

Although the philosophy of benefit-cost analysis is straightforward, the applications of the technique can become very complicated. The basic questions

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[22]Perhaps the best place for a person to start would be the survey article by Alan R. Prest and Ralph Turvey, "Cost-Benefit Analysis: A Survey," Economic Journal, December, 1965, pp. 683-735. See also Robert Dorfman (ed), Measuring Benefits of Government Investments, the Brookings Institution, Washington, D.C., 1965.

center around: 1) Which benefits and costs are to be counted, 2) How are they to be measured, 3) How are they to be valued, 4) At what interest rate are they to be discounted, and 5) What are the relevant constraints?

Especially difficult questions are involved handling of intangibles and uncertainties. Very often the distinction between economic and noneconomic benefits and costs is made. In most instances this is not a useful distinction. The implication is that economics has little to say about social values as if there is sort of dichotomy between economic goals and non-economic goals. What is usually forgotten is that economics is the study of how best to allocate resources among competing ends specified by man and society. These are social and human values. Economic analysis of costs and benefits of attaining beauty, music, or the quiet life is just as "economic" and "social" as the economics of automobile production, potato growing, outdoor recreation or education. The important distinctions are, instead, concerned with whether the effects can be quantified, and (next) whether the benefits and costs can be expressed in terms of a common denominator.

The distinguishing features of intangibles (gains or costs) are that they cannot be expressed in terms of a common denominator, and in some cases they may be not even subject to direct quantification. It is common practice to translate the major gains and costs of a project in terms of dollars as a common denominator. Clearly, there are no markets for most of the outputs of a public library so the problem is to find dollar measures of these benefits. To some extent dollar measures cannot be found. Another basic step is to devise some other quantification or measure of output, e.g., books circulated, reference requests answered. Finally, there may be some effects that defy quantification, e.g., the impact of libraries on preservation of democratic ideals. In many cases side-exhibits can be devised to describe such effects and perhaps to present proxy measures of them.

Two general strategies are usually available for dealing with intangible effects. We do not advocate ignoring intangible effects; neither do we advocate going to the other extreme and asserting that they are priceless or of infinite value and therefore to be achieved regardless of costs! Often these intangible effects may outweigh in importance the effects that are easy to measure and easy to translate into dollar values. First, as we suggested above, there are usually alternative ways to achieve the same (or similar) intangible values. Therefore, the value of an intangible gain from a given project can be worth no more than the cost of producing this value by an alternative means. Second, a minimum value can be placed on the intangible. That is to say, if approved or advocated, an intangible must be worth at least as much as it costs. Therefore, it is always necessary to show the cost of attaining the intangible value and next to demonstrate that this is the most efficient and economical way of producing the intangible value.

For such kinds of public investment analysis it is often useful to substitute cost-effectiveness analysis for benefit-cost analysis. Here a given level of effectiveness, or performance of utility, is specified and then the object is to minimize cost with respect to given levels of effectiveness. Alternatives are then compared within a cost-effectiveness framework.

There may be some important uncertainties connected in the timing and size of anticipated gains and costs. While it is strictly correct that rules for decision-making under uncertainty are beclouded by uncertainty,* there are some

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*Robert Dorfman concluded: "In this long discussion of decision-making under uncertainty we have been compelled to point out flaws and shortcomings in every solution that has been proposed. One would hope that this will not always be the case, and that some day satisfactory solutions will be found to this pervasive and fundamental problem. At present, however, the problem of uncertainty is clouded by uncertainty." See, Arthur Maass, et al, Design of Water Resource Systems, Harvard University Press, Cambridge, Mass., 1962, p. 158.

types of single decision rules and strategies to follow in dealing with uncertain outcomes that can be helpful.[23] The major rule is that single-valued estimates of gains and costs usually constitute insufficient analysis. In principle, benefits and costs should be presented as a probability distrubutions, and not as unique outcomes. At the very least the analyst should describe the major uncertainties and set boundries on the range of outcomes. As McKean cautions:

> For it may be misleading to invite attention only to the average result -- to tell someone, for example, that if he flips a coin, he can expect a side that is half heads and half tails to turn up.[24]

It is important to recognize that the difficulties of dealing with intangibles and uncertainties are just illustrative of many kinds of difficulties that face the analyst in the attempt to quantify and evaluate gains and costs of public expenditures. There may not be unique and correct choices. However, the difficulties are present because life is complex. The fault lies not with benefit-cost analysis. The difficulties of rational decision-making do not stem as much from the methods of analysis as they do from nature of the problems themselves and how they are perceived. Even if the results of rational consideration are inconclusive, the attempt at benefit-cost analysis will tend to expose questions and difficulties that are so easily glossed-over or submerged by unsystematic or "horseback" judgments.

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[23]For a discussion of strategies see pp. 188-207 in Charles J. Hitch and Roland N. McKean, The Economics of Defense in the Nuclear Age, Harvard University Press, Cambridge, Mass., 1961.

[24]Roland N. McKean, Efficiency in Government Through Systems Analysis, John Wiley & Sons, Inc., New York, 1958, p. 71.

In closing this section we wish to add some further cautions concerning the use of benefit-cost analysis. First, it should be evident that the technique can be used inappropriately as well as appropriately. Decision-makers often have great opportunities to bias the studies. It has been charged, for example, that the Corps of Engineers have adopted techniques that bias costs downward and exaggerate benefits. In this case, the benefit-cost analysis is performed by the same agency that does the construction. Moreover, the costs of flood control investment is subsidized so that neither the Corps of Engineers nor the people in the Flood plain bear the costs. The extension of the theory of utility maximization to government decision-makers suggests that governmental decisions may reflect the patterns of taste of the decision-maker, as much as goals of the public.[25]

Second, the amount of money to be spent on analysis and the sophistication of the techniques to be employed will be conditioned by the size of the prospective project, the availability of qualified personnel to do the study, and by the quality of the data. Never commission an elaborate study if a crude one will do. Sophisticated analysis may not be warranted if the size of the project is small, if qualified personnel are scarce and if the data are poor. Also, when embarking on new areas of analysis, it is usually advisable to do "first-cut" or crude studies first. See what can be learned on the first round, and then use the experience gained to direct succeeding higher-level kinds of analysis.

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[25]Louis DeAlessi, "Implications of Property Rights for Government Investment Choices," American Economic Review, Vol. LIX, No. 1 (March, 1969), pp. 13-24.

Third, benefit-cost analysis is most applicable when it is project-oriented, as opposed to wide-scale national or regional programs. When one is dealing with a project there is a beginning and an end and a lot of things can be taken as given or included in ceteris paribus. The larger the project in relation to the economy the more likely things cannot be taken as given, and the more likely there will exist important feedbacks of the program on the economy as well as the economy back upon the program. For large-scale investments one must turn to growth models of various kinds and to systems analysis. Benefit-cost analysis would be more helpful in analyzing particular public libraries than in entire library systems; it would be more valid for analyzing library systems than for analyzing an entire regional development program.

Measurement of Costs

The measurement of costs in the application of benefit-cost analysis is usually viewed as a simpler and more straight-forward task than the measurement of benefits. There are several reasons for this view. First of all, inputs in the form of capital, equipment, land, materials and labor are purchased from markets. These items carry explicit price tags. In a social sense, the cost of any resource is equal to the value of the alternative uses of that resource which are sacrificed or foregone by employing the resource in one use compared to another use. By and large, we can assume that the markets where libraries purchase inputs are reasonably competitive so it is usually correct to assume that the price tags on the inputs come pretty close to measuring the social costs to society of building and operating libraries as opposed to using these inputs in alternative uses. By contrast, outputs from public libraries do not carry price tags and are not usually disposed of in organized markets. As a result, indirect and proxy measurements of benefits will have to be devised.

Second, because price tags are carried on inputs and because also public budgets for expenditures are usually scrutinized, the records and data with respect to costs and the use of inputs is considerably more detailed and complete. For example, it is relatively easy for us to get data on library expenditures (although it is sometimes difficult to separate capital expenditures from operating costs) and to count the number of books, librarians, firm projectors, bookmobiles, slides, pamphlets and so on per library. Records on input items and costs are relatively abundant. We do not suggest, however, that it is easy to allocate costs to individual functions and services.

However, as we have noted earlier, it is relatively difficult to get data on the use of these inputs. We find this a rather strange and unbalanced practice. Perhaps it is fostered by the presence of price tags on inputs. It is also encouraged by the fact that libraries (as do most public firms) are required to account for how they spend their public funds (to the last penny) while they are not usually accountable on how the public facilities are actually used and what outputs are produced. Also, the counting of inputs is fostered by the confusion that one can measure outputs by counting inputs. Clearly, input items and costs are often easier to count and to record than outputs. Yet, as far as libraries are concerned, a great deal more can be done to keep track of library use than is currently the case. Certainly, book circulation statistics for most public libraries were more complete ten to twenty years ago than they are now.

But, the measurement of costs is not greatly different than the measurement of benefits in one respect. While it is important to know total costs and costs by various category of inputs. <u>The most important measures of cost are costs in relation to output</u>. It is here that the difficulty arises. That is to say, what is the unit of output? Measurement of costs and benefits clearly has to be done in relation to output. Just as it is important to know the value of a gallon of

water in relation to the cost per gallon, we need to measure the costs of library operation per unit of service in relation to the benefits of those services. The tough questions are to decide what it is we want public libraries to do and then to construct quantitative measures of output so that we can have, at least crude, notions of what the costs are in relation to benefits. Granted, this may be a difficult task, but this is what rational analysis of libraries is all about. We will not get the job accomplished by trying to find easy ways to obtain answers to irrelevant questions.

Economic analysis of the firm (be it public or private) is usually concerned with two major cost concepts: average total costs and incremental or marginal costs. Average total costs are total costs per unit of output. The behavior of average total costs (do they rise or fall as output is expanded?) is indicated by marginal costs. Marginal costs are defined as the change in total costs in relation to a change in output. If marginal costs are below average costs then average costs will decline as output is expanded; if marginal costs are above average costs then the average cost curve will rise as output is expanded. In the typical case, when a firm has a large capacity in relation to use, the marginal costs of service are low and average costs decline as output is increased. The reverse is true as output is expanded when capacity limits are reached. It is also that case that large-size plants often exhibit economies of scale and have lower average costs of production than small-sized plants.

To our knowledge, public libraries have not been carefully studied in terms of their economic costs behavior. True enough, cost studies of libraries do exist, but we do not find them much help because costs are not related to output. Chapter V below presents our cost estimates of library operation from a sample of

Indiana public libraries. Our preliminary findings show that important economies of scale accrue with increases in library size (output defined in terms of circulation).

What output measures can be devised for library service so that benefits and costs can be counted with respect to a common denominator? In general, libraries can theoretically perform a whole range of services -- loaning periodicals and books, providing study space, answering reference requests, acting as an archive, showing films, giving book talks, and so on. Obviously, there are many possible dimensions to output; the public library is usually a multi-product firm. Yet, not all libraries perform all of these functions and these services are not produced in equal amounts. The large headquarters library produces a different range and mix of outputs than the small neighborhood branch library. Suburban public libraries have different clientel than rural libraries. The libraries in Indiana range in size of book stock from 1,251,000 volumes in Fort Wayne to only 3,500 volumes in the towns of Mathews and Raub. Only about 40 public libraries in Indiana out of total of 246 have book stock collections above 100,000 volumes.

As the principal measure of output we have chosen total circulation. Naturally, we would like to know more about circulation for various kinds of books and also circulation by socio-economic characteristics of users. These figures are not available but we do infer what they might be from the results of surveys taken elsewhere. We would like to have data on reference use, but such data does not exist for Indiana libraries. We can only infer something about reference use from surveys done elsewhere and from the size of libraries.

Because of their small size, it is difficult for us to believe that most Indiana public libraries provide much reference service.[26] For larger Indiana libraries it would be possible that reference use might be some function of book stock and total circulation. For the very large libraries reference might be more related to book stock and less related to total circulation. With all of its infirmities, circulation is at least an important measure of library output. It is all we have at present and it gives us some point of reference for measurement of costs and the evaluation of benefits.

Going further, we have adopted some other crude indicators of output, capacity and costs. As to output, it is useful to measure total circulation per capita, total circulation per registered borrower and total circulation per active borrower. In Indiana about 40 per cent of the population served by public libraries are registered borrowers. Surveys tend to show that active library users (once in 90 days) constitute about 10 per cent of registered borrowers. This means that about 4 per cent of the total population served could be termed "active" library users. And of these users, 70 to 80 percent of the use may be by persons 19 years of age and under. Calculations on books circulated per registered borrower show that a figure of 10 to 15 books per year of circulation per registered borrower is common, although the range is from lows of about 2 or 3 books per registered borrower per year to figures in excess of 30 books per registered borrower per year.

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[26]The amounts of inter-library loans for small Indiana libraries are also small. This fact lends support to this view.

It is also useful to compare annual total costs (excluding capital expenses) with annual circulation to get some notions as to annual costs per book circulated. In so far as libraries perform other functions these average costs figures will overstate costs of book circulation. The approximate range for Indiana libraries is for highs in excess of $1.40 cost per book circulated to lows of 15 cents per book circulated. Most average cost figures fall in the range of 25 cents to 60 cents per book circulated.

Another set of cost figures can be derived by comparing total costs per total population served with total costs per registered borrower and total costs per active borrower. In Indiana, expenditures for public libraries range from about $7 per capita for total population served to figures of less than $1 per capita for total population served. The typical range is between $2 and 4 per person per year with the average being $3.87 in 1967.

On the surface, it would appear that $4 a year per person might be a low price to pay for public library service. Yet, when we calculate expenditures per registered borrower and per active user the average costs per library user takes a different perspective. If registered borrowers are 40 per cent of the population served then expenditures per capita must be multiplied by a factor of 2½. A figure of $3.87 per capita for total population served becomes $9.70 per registered borrower. If active users are only about 5 per cent of the total population, the per capita costs must be multiplied by a factor of 20 and the expenditures per active borrower may exceed $75 per year.

Admittedly, these types of expenditure figures are quite crude and great care should be exercised in their use. Yet, they do place public library

expenditures in perspective and help us get a better feel on actual costs. Moreover, if expenditures per active borrower do, in fact, approach $75 per year, we can have a better notion of what a similar amount of public funds might buy in alternative ways. To be a bit facetious to make this point, $75 per year would provide enough money to purchase and give away free of charge to active borrowers 15 paperback books at $1 each and 10 hard-back books at $6 each. We could also compare $75 a year with alternative ways to buy education (elementary and adult).

Finally, in the measurement of costs, we need to have some notions of capacity. We hear, for example, that libraries are straining to meet demands. Yet, as we noted above, there is little concrete evidence to demonstrate that claim. A very crude measure of capacity is total book stock (we have few other measures). In turn, a crude measure of use of capacity would be total annual circulation divided book stock. If total bookstock turned over many times during a year we might infer that use was high in relation to capacity.

In 1967, the total book stock for all public libraries in Indiana was 9.7 million volumes and total circulation was 24.5 million. The average turnover of bookstock was about 2.3. The range for individual public libraries was from high turnover rates in excess of 5.0 in lows of below 1.0.

Although there are many other factors to take into consideration, it would appear that Indiana libraries, on the whole, do not appear to be strained to meet demands for circulation when measured by bookstock turnover. It could be, however, some (or many) individual libraries may have a shortage of librarians, not bookstock. We also note that bookstock turnover figures are usually lower for small libraries than larger ones. This factor could reflect the fact that these small libraries may be open fewer hours (many are open less than 25 hours per week) and have inferior book collections. Also, very large libraries (approaching 1,000,000 volumes) may have lower bookstock turnover ratios than middle-sized libraries

because part of the bookstock collection may fulfill an archive function and therefore would not generate much circulation.

Clearly, the question of costs needs to be explored in greater detail. We have been surprised at the lack of study of library production functions and library cost functions. Expenditures must be related to output, not just counted per unit of input.

Measurement of Benefits

The most difficult part of an economic evaluation of public library service is the measurement of benefits. In theory, benefits should be quantified in terms of dollars that in turn result from units of outputs evaluated at some prices; benefits and costs are then both comparable in terms of dollars. As we suggested above, it is also important to see the distribution of benefits and costs by socio-economic and geographic groups so that inferences can be made about equity and distributional considerations of benefits and costs, as well as efficiency.

The preceeding sections have dealt with the problems of lack of data on library use and the necessity of accepting, for the moment, very crude measures of output, costs and capacity. We have noted the wide differences in functions and perspectives between what public librarians claim they do and what actual use appears to be. We have also noted that public libraries have a different mix of services depending upon their size, location and clientele. We have suggested that benefits may accrue to individual users and benefits for some kinds of library service may also accrue to the public at large. Finally, we have noted that the absence of user charges makes it very difficult to estimate the worth as seen by users of the services.

Ideally, we would like to measure all benefits to whomever they accrue. In practice, we will have to settle for a lot less. Clearly, our attempts to measure to the size and distribution of benefits will be quite crude and exploratory. Refined estimates will have to await greater data, greater research budgets, more time, and additional economic expertise. Despite all of the qualifications it should be noted that at least a start has been made. The difficulties lie not so much in benefit-cost techniques per se, but in the complexity of the problem and in the fact that some of these questions are apparently being asked for the first time.

We shall rely on three major ways to estimate benefits. In most cases, we will come up with estimates that establish limits on values, e.g., the benefits must be at least so much and they are not more than so much. First, benefits must be worth at least as much as they cost. Although this is a simplistic notion, a great deal of progress can be made at this stage of the game of relating costs to units of output. When we know how much different amounts the various library services cost, we can better judge their minimum worth. This benchmark should also be supplemented by notions of likely distributions of the cost under alternative financing policies.

Second, the benefits of particular kinds of library service can be worth no more than the cost of obtaining similar or equivalent benefits by alternative means. Third, whenever possible we will try to find market price for a comparable output in the private sector. For example, this method of benefit estimation is often used to value public electric power production but it has apparently limited application to public library service.

At this stage, it appears that the small libraries are easier to tackle than large libraries because they produce a limited range of services. For small libraries, i.e., 25,000 volumes of book stock and under, (libraries of this size constitute about 170 out of the 246 public libraries in Indiana),

there are two major kinds of use: use by school-age children and use by adults for fiction reading. True enough, there may be other kinds of service provided, but valuation of these two types of use would comprise a large part of the benefits from current production. Small libraries do not provide much reference functions apart from use by school children.

It would be possible to estimate the benefits of adult fiction circulation by looking at what prices or rentals are charged for similar books by private (for profit) lending libraries. True enough, one could raise some sophisticated questions about this measure, but at least it would give us some "ball-park" figures. Many public libraries also have a rental section. The prices charged there might also be useful indicators of the value of adult circulation. It seems possible that this method could also be used to value a great portion of non-fiction adult circulation which would be of the "best-seller" variety and also of the "how to do it" variety. As we noted in Chapter III, the "serious" adult reader is not very plentiful and his library use seems to be confined to the large city and university libraries.

The fact that the adult circulation of fiction seem to be falling as per capita incomes rise seems to indicate that the demand for "light"-reading is income inelastic and that the demands for alternative forms of recreation, entertainment, and culture are either income elastic or that their costs are falling relative to library service. With zero prices now being charged for most "light" reading in public libraries, it would seem that the former explanation would be more valid.

Falling adult circulation may also reflect that people are now reading paperbacks instead of checking out library books. The cost of paperbacks would also seem to place an upper value on fiction circulation. If we were to assume that the average paperback is read by two or three people the value of one circulation of "light" reading by a public library would be one-half or one-third the cost of a new paperback, not the total cost.

The second major product of the public library is the production of school library services. Here we should distinguish between the educational function for adult and continuing education and that of functioning as a school library for elementary and high school students. When librarians talk about the educational nature of libraries they usually refer to the former. Yet, as we have seen public libraries do not cater much to the "serious" adult reader but, instead, the eudcational service is largely to the latter.

It would be possible, therefore, to set a limit on the value of this educational service produced by an individual public library. That is to say, this educational service can be worth no more than the cost of producing the equivalent service in a school library. It seems possible that school libraries can perform services for their students at less cost than public libraries because of the sharing of capital costs of buildings, land and parking lots with the other school functions.[27] There are questions, however, of how to allocate costs and whether school library operations are fully comparable with the school library service performed by public libraries, i.e., are the qualities of service comparable?

We might point out here that in very small communities the attempt to build and operate two separate libraries (both school libraries and public libraries) may result in scales of operation for each that are too small to be efficient. The pooling of library resources in small communities may still not guarantee "good" library service, but the services of a library that combines these financial

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[27]There may be also the possibility of sharing other community functions with public schools in small towns, e.g., the school auditorium. Increased community use of school facilities would appear to make the case for combined community-school libraries stronger. Public libraries can also share costs over a number of functions.

resources might constitute an improvement over two separated, uncoordinated libraries. It is also possible that the small library, by similar reasoning, because of its limited resources, scale of operation, and limited market, should restrict itself to a smaller range of functions. In other words, the payoff in terms of benefits might be greater if the small library would concentrate on producing one or two services than if it were to attempt to produce as a complete multi-product firm. On these grounds, the case for concentrating on the school library function might be strengthened.

As the library gets larger, range and mix of services performed changes and expands. Yet, despite rise of educational levels, the "light" reading still comprises a large part of library use by adults. Use by school children is often supplemented by use by college students. The techniques of benefit estimation applicable to small libraries could still be applied to large libraries. The major omissions would be the value of reference uses, the archive function, explicit programs in adult education, and the cultural value of a storehouse of classic literary works. Obviously, these are not mutually exclusive categories.

It is particularly difficult to estimate value of the archive function for public documents, historical records and the storehouse of classic literary works. By their nature, these collections do not and will not attract much use as measured by circulation. The uses will be largely in-the-library and the users will be few and far between. Moreover, the public or collective benefit of this type is likely to be large relative to the private benefit that accrues to individual users. It would be helpful to isolate the costs of providing these functions so that a minimum value on these benefits could be established.

It is also evident, that the high cost and the limited use of these services would mean that these services should be provided only by a few centers and the costs shared by all served. The "serious" user of these services could travel longer distances than might be the case for travel for less specialized services. Also, the provision of inter-library loan services from the major libraries to smaller ones would seem to be feasible.

There is another kind of use or user of public library service that needs to be considered and that is the "option" value of library capacity. As Weisbrod has suggested, many kinds of public facilities may provide benefits in addition to those associated with actual use.[28] It seems plausible that some people might place a value on the option of being able to use a library (it is there if you need it) even though they would seldom actually use the library. Similar observations have been made relative to mass transit, hospitals and public recreation facilities. It is clear that the value of such an option is a real one; it is also clear that the option value is not limited to public production but also to various kinds of private production. For example, one may like the option of having a corner grocery store even though he habitually shops at a supermarket in a regional shopping center.

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[28]Burton A. Weisbrod, "Collective Consumption Services of Individual Consumption Goods," Quarterly Journal of Economics, Vol. 68 (August, 1964), pp. 471-477.

It is difficult to place a value on such options because there is no market for options to use library services. The problem is complicated by the fact that public library service is "free" to the user. Presumably, one might conduct a survey to determine what it might be worth to non-users just to have the option of using the library. In a crude sense, one might say that the willingness of communities to establish public libraries even though few citizens use them is an indication of this "option" value. This argument, however, would be on firmer ground if it could be established that the decisions to finance, sustain and expand public library service were made with full knowledge that option values were really a large part of what the average taxpayer is purchasing. Because the facts of public library use and library finance are so obscure to the general public some doubt must be cast on such an argument. In fact, the apparent willingness of communities may be more a product of the "twin" influences of the "halo" effect combined with the "invisibility" of library expenditures than the desire for a library option.

A partial indicator of the value of an option might be uncovered by a two-part charge method of pricing library services. A fixed charge could be made for the issuance of a library card and this could be coupled with a charge per book borrowed. If people were not willing to pay for the right to borrow independent of use, one could claim with some justification that the value of options may not be very large.

On this point, library supporters often respond that the use of charges would be "unfair" in that this would tend to limit library service to rich people. We want to take explicit notice of this argument at this point. First, the bulk of present users of libraries are neither the poor nor the rich -- but are largely middle-class, middle-income persons. Second, the present methods of library finance are income regressive. Third, we may very well want to redistribute

income to the poor, but it could turn out that provision of subsidized library services is a poor way to redistribute income. Fourth, if it were established that we would want to subsidize library use to the poor the libraries would have to change the nature of library operations to appeal to this unserved clientele. Fifth, failure to employ user charges means that alternative means of valuing and registering demand, of rationing service, and of financing will have to be found. In other words, the functions that can be performed by user charges are not unimportant and it may be difficult or costly to get them performed by alternative means. Finally, the arguments for "free" library services are strongest when public benefits over and above individual benefits can be demonstrated.

CHAPTER V

LIBRARY COSTS

The preceding chapter discussed several issues that arise in analyzing costs of library service. As pointed out there, we have much more information concerning costs of library service than we do concerning benefits. Libraries buy their inputs in organized markets, so data are available on the prices paid and on the total outlays for inputs. Because libraries generally have to account for the money they receive, they keep records of their outlays.

Economic Costs Versus Expenditures

Even though libraries keep records of outlays, their records are not what economists would like to have to show the economic costs of library service. Economic costs include annual expenditures for current operation (payment for all inputs purchased and used currently) plus annual consumption of capital. Some inputs are used up instantaneously or within a short period; others -- buildings, furniture, book stock, card catalogues, etc. -- are used up only slowly. The current operating expenditures cover purchases of inputs that are used up within a short time, i.e., labor, materials, electricity, telephone service, and so on. Durable or capital assets provide a stream of services over time before being completely used up. Private business estimates this annual consumption of capital through an allowance for depreciation. The expenditure records of libraries -- and of most governmental institutions -- do not show the annual consumption of capital. With information concerning capital outlays, one could estimate annual capital consumption. But the published expenditures for Indiana's public libraries generally do not show capital outlays, so no data are available for estimating annual capital consumption.

The annual rental of land used in providing library services should be a part of the economic costs of providing such services. But rent will almost never show up in the operating expenditures of public libraries. The reason is that the libraries usually own the land occupied by their buildings, so they do not have to pay rent in cash. One would have to impute the rental value of land to libraries to include it in their annual operating costs. No problem would exist if libraries leased the land used in providing library services; the annual lease payment would be part of annual operating costs. We were not able to include the rental value of land as a part of the operating costs of public libraries because we had no information about rental values. An appraiser could estimate the annual rental value of such land, but to hire one to do so would be expensive and time consuming. Our cost estimates simply omit both rent and annual capital consumption. Thus they understate the economic costs of providing library service.

Economic Costs and Social Costs

True social costs of libraries -- the value of the next best alternative use of the resources -- may not be identical with economic costs as seen by an individual firm. Some capital items could be so specialized that they would have little or no value in any alternative use. In such cases, their use for providing library service does not require society to forego any alternative use, i.e., their opportunity cost is zero or nearly so. The annual consumption (depreciation allowance) of such capital items would then overstate their social or opportunity cost. Generally the detailed information necessary to estimate social costs as distinct from economic costs is simply not available.

The rental value of land is a social cost as well as an economic cost. To use the land for providing library services is to forego other uses of that land. If

land were leased in a free market, the annual lease payment should measure both the economic and social cost of its use by libraries. As explained in the preceding chapter, operating costs give a reliable measure of the social costs of currently purchased inputs.

Costs Related to Output

Even if we assume annual expenditures to be a reasonable approximation to annual social costs of providing library service, we are still a long way from the economist's concept of costs. The previous chapter pointed out that costs must be expressed per unit of output to have real meaning. The output of libraries is not easy to measure or to estimate from the information available. This problem is common to most public services, such as police protection, fire protection, and education. Yet without some estimate of output, one cannot satisfactorily analyze expenditure or cost data. For instance, two communities of the same size might spend widely different amounts per capita on their public libraries. The community with the higher per capita expenditure might be supplying far more library service per capita than the other community. And the cost per unit of library service could be less in the community with the higher per capita expenditure.

The previous chapter indicated that we were using annual circulation as our measure of library output even though it is far from ideal. Circulation might seem to be a homogeneous measure of output that is comparable among libraries. There is, however, a quality problem with circulation. Consider two different communities with the same circulation per capita. Assume that the first community is much larger and has a much larger collection of books, periodicals, and other library materials. The quality of service, as reflected in the variety of books, periodicals, and other materials available to the library users, is clearly higher in the larger library.

In addition, the larger library would probably offer better service to the user, such as more professional assistance, faster service, more hours open per week, and so on. The person using the larger library obviously is getting a better quality of library service each time he checks out a book than is the person using the smaller library. Circulation figures do not reflect these differences in quality. In addition, it does not reflect the output of other library services.

Total, Average, and Marginal Costs

In the theory of the firm, economists employ various cost concepts related to output; among them are total, average, and marginal costs. Total costs are simply total outlay for a given output; average costs are total costs divided by total output; and marginal costs are the additions to total costs resulting from a small increase in output. The preceding chapter contained a more detailed explanation of these cost measures. The three costs may be for the short run or for the long run. Short-run costs show how costs vary with output when some inputs are fixed in amount for the time period. The fixed inputs will usually include the plant or building. Long-run costs show the relationship between cost and output when all inputs may vary. The time period is long enough to change all inputs, including the plant or building, in adjusting inputs to the output. In the short-run, a library might increase output by just hiring more labor and buying more supplies; in the long run it might increase output by adding to capital facilities (expanding the building and equipment) in addition to hiring more labor and other inputs.

The annual operating expenditures for individual libraries probably come close to measuring short-run costs in which the libraries can vary the amount of labor and supplies but must continue to operate with the given plant or building. By looking at expenditures for a cross section of libraries of differing sizes, the expenditures

could, however, represent long-run costs. Presumedly, the different-sized libraries would produce their individual outputs with different amounts of inputs, including different-sized plants or buildings. Consequently, the relationship between costs and outputs portrayed by the cross-sectional data could be for the long run if each library was in equilibrium, i.e., if each had adjusted all its inputs to its output.

Despite the shortcomings of the library expenditures for economic analysis, they still provide useful information. In the following paragraphs, we shall first present some national trends in library expenditures and then some data pertaining to Indiana's public libraries.

National Trends in Library Expenditures

The national data on public library expenditures cover, for the most part, only cities with 50,000 or more population. Data for such libraries have generally shown that expenditures for staff salaries accounted for the bulk (72 per cent in 1959) of total operating expenditures.[1] Next comes purchases of books and periodicals (another 13 per cent of the total in 1959) followed by binding expenses (2 per cent). Operating expenditures per book and per staff member both grew at an annual rate of between three and four per cent during the period 1953 to 1962.

Capital outlays for public libraries in 1960 were about 15 per cent of operating expenditures. Currently the cost per square foot of new library buildings is probably in the range of $30 to $40. The annual interest and principal payments would be between $2.50 and $3.25 per year per square foot (assuming a 50 year life and an interest rate of 8 per cent). General maintenance would probably run around $1.00 to $1.25 per year per square foot. These estimates are rough ones -- the expenditure data do not permit them to be calculated.

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[1]The data in this section are from Douglas M. Knight and E. Shepley Nourse (eds.), Libraries at Large, The Resource Book Based on the Materials of the National Advisory Commission on Libraries, R. R. Bowker, Co., New York and London, 1969, Chapter V.

Table 1 shows that operating expenditures per capita and per unit of circulation generally declined as the city size increased.

Table 1

Relationship Between City Size and Public Library Costs

City Size	Cost Per Capita (1961)	Cost Per Unit Circulation (1961)
Under 10,000	$15	$1.50
10,000 to 35,000	12	1.30
35,000 to 100,000	10	1.10
100,000 to 200,000	9	1.10
200,000 to 500,000	7	1.00
500,000 and over	6	0.90

SOURCE: Joseph L. Wheeler, and Herbert Goldhor, Practical Administration of Public Libraries, p. 554 (as quoted in Libraries at Large).

The estimated cost per capita declined from $15.00 for public libraries in cities under 10,000 to $6.00 for libraries in cities over 500,000. The estimated cost per unit circulation fell from $1.50 to $0.90 for libraries in these two city sizes.

These national data suggest that larger libraries operate more economically than smaller ones. Even though the evidence suggests scale economists, the differences in cost of operation are not great. Furthermore, the empirical evidence is somewhat limited; sceptics might still question whether the data demonstrate conclusively the existence of scale economies.

The ratio of number of staff members to book stocks tended to remain constant among libraries of different sizes. Thus doubling the number of volumes in a library required approximately a doubling of labor inputs. But the amount of book stock and of labor needed per unit of circulation declined as the book stock and circulation increased. Thus the main reason for these scale economies appeared to be that circulation expanded about twice as fast as the number of volumes carried and amount of labor needed.

Mathematica in its report to the National Advisory Commission on Libraries stated that the operating costs of public libraries had doubled in the decade 1953-1962 during which the national rate of inflation was relatively small.[2] The report attributed the more rapid increase of costs in libraries to the much slower growth of productivity in providing library service as compared to other sectors of the economy, particularly those producing goods. The relative cost increase for libraries was typical of a number of service sectors in the economy. Mathematica stressed that this relative rise in costs was not the result of inefficiencies, but of the nature of the production process in providing library services. Furthermore, according to this report, we should expect a continued relative rise in library costs in the future because of the inability to increase productivity as fast as in the goods-producing sectiors of the economy.

As previously stated, expenditures or cost figures are more meaningful when expressed per unit of output (somehow measured). For public libraries in cities of 50,000 or more population, operating expenditures per volume circulated rose at an annual rate of 1.8 per cent between 1954 and 1959. Operating expenditures per volume owned rose during the same period at a rate of 3.9 per cent.

There may be some questions as to the relevancy of these national trends for Indiana. As mentioned above, the trends come from an analysis of public libraries serving cities of 50,000 or more in population. Most public libraries in Indiana serve populations of less than 50,000. Consequently the trend in relationships for the larger libraries might not hold for the smaller libraries that predominate in Indiana.

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[2] Ibid., Appendix F-2.

Indiana Trends in Library Expenditures

Between 1953 and 1967, aggregate expenditures for public libraries in Indiana rose from $4.9 million to $16.1 million.[3] Expenditures per capita for the districts served by public libraries rose from $1.60 in 1953 to $3.95 in 1967. The increase in both per capita and total expenditures was steady and continuous during this fourteen-year period. Salary expenditures comprised approximately 50% of the total throughout the period. Expenditures for books, magazines, and binding fluctuated narrowly between 17 per cent and 19 per cent of the total. Other operating expenses, including primarily maintenance and salaries of maintenance personnel, generally accounted for about 30 per cent. If the salaries of maintenance personnel had been included with other salaries, the distribution of operating expenses for Indiana would have been close to that for the big libraries in the United States.

Table 2 shows the expenditures of the public libraries by size group for 1967. The different groups of libraries did not deviate much from the statewide distribution of expenditures for salaries; books, magazines, and binding; and maintenance. Expenditures per capita and per book circulated did vary somewhat among the different size-groups of libraries. As Table 2 shows, the expenditure per capita was relatively high for the smallest libraries, declined to a minimum for libraries serving a population of 6,000 to 9,999, and then climbed to a high for libraries serving more than 50,000 people. The most noteworthy result of calculating the expenditure per book circulated was the high figure for the largest libraries, a somewhat lower though still high figure for the smallest libraries, and the small variation among the libraries in the other four size categories. Expenditures per book owned show a rather sharp and continuous drop with decreases in population served.

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[3]Based on Indiana State Library, Statistics of Indiana Libraries for the years indicated.

Table 2

Public Library Expenditures by Size Group
Per Capita and Per Book Circulated
Indiana, 1967

Size Group (population served)	Expenditure per Capita	Expenditure per Book Circulated	Expenditure per Book Owned
50,000 and over	$4.20	$0.84	$2.25
18,000 - 49,999	2.90	0.46	1.33
10,000 - 17,999	2.67	0.43	1.25
6,000 - 9,999	2.58	0.51	0.93
2,500 - 5,999	2.90	0.44	0.81
0 - 2,499	3.59	0.65	0.60

SOURCE: Calculated from data in Statistics of Indiana Libraries, 1967.

In an unpublished study, Haynes Goddard estimated long-run costs for Indiana libraries by first determining the relationship between all inputs and the circulation of these libraries.[4] After estimating this relationship -- called a production function in economics -- he was able to estimate economic costs (not expenditures) by applying the prices of the inputs to the equations derived from the production relationships. He calculated costs for ten libraries of varying sizes. The results of his calculations appear on Table 3. All figures are for the year 1967.

As the table shows, the marginal cost of circulation (the cost of circulating one more book) ranges from a low of 4¢ to a high of 83¢; the median is around 40¢. The average expenditure per book circulated ranged from 5¢ to 93¢ with the median about 45¢. The lower value for the marginal than for the average suggests that each library experiences lower average costs as its circulation increases. This means that the libraries realize scale economies.

The variation in marginal and average costs among these ten libraries was great. But the estimating procedure probably overstated circulation costs of large libraries relative to the small ones. Circulation comprises a larger share of total services provided by the small libraries than by the large ones. To assume (as Goddard did) that all inputs produced only circulation of books thus overstated circulated costs of large libraries relative to the small ones. Even so, Goddard found fairly strong evidence of scale economics in his estimates of a library production function, i.e., large libraries got more output (circulation) from a given quantity of inputs than did small libraries.

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[4] Haynes Goddard, "An Economic Analysis of the Public Library," Department of Economics, Indiana University, July 17, 1969 (mimeographed).

Table 3

ESTIMATED COSTS PER BOOK CIRCULATED

SELECTED INDIANA LIBRARIES, 1967

LIBRARY	MARGINAL COST	AVERAGE COST	TOTAL COST
1	$0.04	$0.05	$ 112,286
2	0.66	0.75	1,995,723
3	0.11	0.13	33,641
4	0.53	0.60	39,790
5	0.83	0.93	54,905
6	0.47	0.52	28,816
7	0.33	0.38	27,026
8	0.50	0.57	17,688
9	0.22	0.25	11,991
10	0.19	0.22	2,260

SOURCE: Haynes Goddard, "An Economic Analysis of the Public Library," Department of Economics, Indiana University, July 17, 1969 (mimeographed).

Conclusions

The appropriate costs for a benefit-cost study depend upon the specific objectives of the study. The purpose might be to compare the costs and benefits of one service currently offered, of an increase in this service, of an entirely new service, or of the total operations of a specific library. Still more broadly, one might compare the costs and benefits of a system of libraries if such a system existed. Thus the appropriate costs might be those for all of one service, an increase in this one service, a new service, or the entire operations of one library or a system of libraries.

The authors of the M.I.T. study concluded that they had successfully allocated total expenditures to several output categories.[5] But in their surveys to estimate benefits, they did not obtain information concerning benefits for each output category for which they estimated costs. Their output categories were the following: collection building, collection maintenance, and user services. Each of these categories was broken down into several subcategories. For example, collection building consisted of selection, ordering, purchase costs, cataloging, and new-item preparation.

For the evaluation of public libraries, the desirable output categories would be first a two-fold division between services for school-age youths and for adults. Within each of these two categories, services should be divided into circulation (out-of-library use) and reference, browsing, and use of facilities in the library (in-library use). Finally, each subdivision of uses thus far should be divided into use for educational purpose and use for recreation or entertainment. Obviously

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[5] Jeffrey A. Raffel and Robert Shishko Systematic Analysis of University Libraries: An Application of Cost-Benefit Analysis to the M.I.T. Libraries, The M.I.T. Press, Cambridge, 1969.

the allocation of total economic costs of a library to these different output categories would require a careful, detailed study of one or a few "representative" libraries.

The authors of the M.I.T. study carried out the detailed data collection that permitted them to allocate costs to the output categories. Library personnel kept records of the time spent on various activities so that their salaries could be appropriately allocated. Similar detailed information permitted the authors to allocate costs of book storage, of reading and study facilities, and of selection, acquisition, and cataloging. They included a depreciation allowance for the use of capital facilities, so they attempted to estimate economic costs (but apparently not land rent) rather than treat only the reported operating costs. Such detailed data collection is clearly beyond the scope of the present study. Our purpose in this chapter is simply to describe the available data and to tell what data we would need to carry out a satisfactory benefit-cost study. The next chapter will continue in this same vein in discussing benefits.

Chapter VI

LIBRARY BENEFITS

The Absence of Data

Earlier it was stressed that the most difficult part of an economic evaluation of public library service is the measurement of benefits. The difficulties do not lie primarily with benefit-cost techniques per se. Instead, benefit estimation is difficult because of the complexity of defining what the objectives of the library are and, in turn, finding quantifiable indicators of performance or effectiveness. This problem is particularly troublesome because some of the questions are being asked for the first time by trained economists who usually rely on extensive demand and production cost data to evaluate other types of goods and services.

In the case of libraries, economists are likely to be frustrated in their analysis by the fact that library services are provided "free" to the public so that the usual indications of market demand are lacking. Moreover, the statistics on library expenditures do not show economic costs (as explained in Chapter V). And detailed statistics on library use are not readily available.

In the absence of user charges for library services the economist is forced to impute values to services based upon use. We noted above that benefits may accrue to the public at large in addition to benefits perceived by individual users. As far as individual users are concerned, we have noted that most surveys of library use find that two-thirds to three-fourths of public library use is by school-age children and most of the other use is by adults for recreational reading. The user surveys elsewhere also show that public libraries are most used by middle and upper income groups. In many cases, it seems fair to conclude that the public library is alien institution to lower-income, minority

groups. Finally, we have noted that all surveys show that active library users are a small part of the total population with library use dropping off sharply for age groups 24 years and older.

While we have data from surveys of library use elsewhere (e.g., Hawaii and Cleveland), we do not have similar statistics on use (by borrower, by type of book, by age, by socio-economic groups, etc.) for Indiana public libraries. The brief surveys done in Indiana however, seem to bear out the findings of surveys elsewhere. As a result most of our discussion is limited to generalizations and inferences about use of public libraries in Indiana derived from the other surveys.

On this point, the data from other published surveys are still not sufficient to serve as a basis for a reasonable estimate of benefits from library use. First of all, there is no reliable data on in-library use of reference materials, i.e., data which give the magnitude of the use and say something also about the user and the use he makes of it. Without such information it is difficult to infer possible individual and public benefit. In-library use should also include data on the possible study-hall function for youths and other use of tables and reading rooms.

Even on circulation where we have the most use data the statistics are not as complete as would be needed for a benefit analysis; we need more information as to the type of book borrowed, by whom and for what purpose. Of course, this would be an expensive and perhaps un-necessary task to require of all public libraries everywhere. Yet, until this type of information is gathered from representative public libraries, the economist will likely come up short in attempts to measure public library benefits.

It would not seem to be a costly or complex special study to devise computer cards for registered borrowers (and other library users) which contained a fairly detailed amount of socio-economic data instead of merely asking for the borrower's name and address. It would seem possible to record the date, type of book borrowed (by detailed breakdown) and type of other library use made on a master card for each individual. If we had this information over time for some representative libraries, we would have more of the needed information for estimating of benefits. Of course, it would then be necessary, and probably still difficult, to impute dollar values to these uses. But, at least we would have a basis for such imputation. We would know the spatial limits of the market area; we would have a detailed socio-economic breakdown on the clientele and their types of use.

To get a more complete picture, however, it would also be necessary to get similar socio-economic data on non-users of libraries. For one thing, a library could be very effective in providing services to its users but fail badly in serving other groups. This is not to imply, however, that the public library must and should service <u>all</u> publics at all times and places. The public library cannot be all things to all people. It has limited resources and it has capabilities of doing some things better than other things. Yet, it is still clear that past and current library functions that cater to limited clientele are not always sacrosanct or immutable. Public library policy should probably adopt a strategy of doing some things well for their limited resources, but to do this, policy makers need to have a clear understanding of library capabilities (present and potential) in relation to changing "market demands" within the library service area.

The preceding discussion suggests that this chapter should be viewed as an introductory, exporatory "think" piece on measurement of library benefits. The absence of detailed statistics on library use by user, kind of use and purpose makes it impossible to go very far. Moreover, it is clear that benefits of public libraries cannot be evaluated independently of the costs and benefits of school libraries because the two kinds of libraries are so interdependent. If almost three-fourths of public library use is by school-age children, we cannot evaluate this use without knowing a great deal about the uses and the costs of school library service. The question is not a simple one of spending monies for two agencies in the same area to provide similar services. We also need to know to what extent the two library institutions are complementary as well as substitutable. To the extent that the services are substitutible we should chose the least cost institution or solution. If the services are complementary can we devise means to share costs and engage in coordinated planning.

Finally, as far as substitutability is present, the benefits of public library services to school-age children can be worth no more than the costs of providing similar services by school libraries. Knowledge of the important relationships is necessary not only for benefit estimation for also for rational allocation of scarce public funds between library services and other public uses. Our emphasis here to explore how an economist might begin to make measurements of benefits, i.e., what data are needed and how one would use them.

General Issues in Benefit Estimation

Perhaps the most basic question in benefit estimation is the specification of objectives. Measures of library benefits require specification of performance and, in turn, evaluation of performance requires a statement of objectives. Ideally, objectives and performance should be capable of being expressed in common terms and performance should be measurable in relation to specified objectives ordered or weighted by priority and importance. Can objectives for public libraries be clearly specified? Who is to specify objectives? Can there be agreement on these objectives? What weights should be attached to different objectives? How do we decide between trade-offs in satisfying the demands of different clientele? Can we specify measures of performance that are tangible and quantative?

To be more specific, how is the provision of reference services (in dollars) to be weighted relative to the provision of circulating material. Even in such a specialized institution as a college library, choices usually have to be made between expanding reference service and research needs to faculty and to graduate students versus the need for undergraduate students to have more circulating materials, more xeroxing, and more course-required books on reserve. How should we weigh service to school-age children compared to recreational reading for adults? If present library users represent only a small part of potential users (currently non-users) how do we decide the "worth" providing services that would attract present non-users? Efficiency in providing service to present users may be less important than potential benefits of new services to meet the needs of non-users. Finally, how do we count the benefits which may accrue indirectly to the public at large in addition to the private benefits seen by individual users?

To sum up, there are at least four problems in measuring benefits of library service: 1) the apparent lack of quantifiable objectives and measures of performance, 2) the need to have a weighting scale across objectives and across sub-groups of clientele, 3) the lack of weighting scales to measure public benefits in relation to private benefits, 4) the difficulty of relating benefit streams to cost streams in terms of a common denominator (dollars).

Clearly, answers and solutions to these difficulties would require a study far beyond the scope of this exploratory effort. Moreover, answers to some of these questions are not within the powers or ability of economists to handle. In particular, questions regarding specification of objectives and relative weights are tasks for policy-making officials, not economists per se. However, the economist has the duty to raise these questions and to ask them in such a way that useful answers may be given so that he can get on with the task of a benefit-cost study of library operation and investment.

Which Library and Which Service

It would be possible to measure benefits and costs of a particular library service, of a particular library, or of a aggregate group of libraries. As a practical matter the difficulty of analysis would increase greatly as the scope and size of the system increased. In the analysis of a particular service, for example, a great many variables be taken as given and fixed whereas an enlargement of system would clearly introduce the possibilities of inter dependencies, feedbacks and more complex relationships, not only on the benefit side but also on the cost side where cost allocation in a complex system is difficult at best.

In 1967, there were 246 public libraries in Indiana, a state library, 46 college libraries, 22 institutional libraries, and nearly 2,500 school libraries (in addition to many kinds of special libraries). For purposes of this exploratory study we were asked originally to look at benefits and costs of the Indiana public library system. However, it soon became obvious that this was not a meaningful task.

First, the public libraries in Indiana are not part of a "true" system. They all are operated more or less independently with differing levels of financial support and differing institutional arrangements. The 246 public libraries are part of a system only in the sense that they are all public and are located within one state. True enough, all of them have potential access to the services of the State Library and most of them conform to some general statutory limitations.

Second, the public libraries in Indiana vary greatly in size of both stock, circulation, services provided and in population served. The smallest library (Raub) served a population of 336 with a book stock of 3,571 volumes. The two largest libraries were Indianapolis and Fort Wayne serving populations of 477,759 and 232,196 with respective book stocks of 916,191 and 1,251,209 volumes. Only 25 libraries served populations above 40,000 and 196 out of 246 libraries served populations of less than 15,000 people.

There is probably no such thing as a typical Indiana public library but if there is it would be a medium-sized town library (83 per cent of the libraries had fewer than 50,000 volumes in 1967) with a relatively small collection having fairly high costs of operation in terms of the quantity and quality of service provided. We would expect that the bulk of the services provided would be library

use by school-age users (including study hall use as well as circulation) accounting for two-thirds to three-fourths of total use. Adult circulation for recreational and how-to-do-it reading materials would probably account for most of the remaining service. Perhaps as much as 60-80 per cent of the school age children would use the public library regularly and perhaps as much as 10 to 20 per cent of the adults would use the library. However, the bulk of the circulation would be accounted for by perhaps 3 to 5 per cent of total population. However, these figures come in large part from surveys elsewhere, and we can only assume that patterns of use in Indiana are similar to those found elsewhere. The simple fact is that we really do not know a great deal about public library service in Indiana.

As a result, it was decided to base the discussion of benefit measurement on how one might attempt to measure benefits associated with the circulation of books to school-age users and to adults. We do not know much about use of other library services. Even with the restricted boundaries our discussion will be brief and sketchy because of the lack of data on library use -- in both school and public libraries.

Three Attempts at Benefit Estimation

We have studied three attempts by economists to estimate benefits of library use. In each case some useful insights were provided and some promising directions for future research were developed. But, it is fair to say that these efforts were not very conclusive or satisfying; they were largely conceptual and fell much short of empirical verification. We suspect that this state of affairs will not change in the near future because these three studies, like the present one, were largely exploratory and carried out with limited budgets over limited time periods.

1. The Black Model

In a study commissioned by the National Advisory Commission on Libraries, Stanley Black of Princeton University prepared a paper on "An Economic Model of Library Operation" which contained a economic demand function for library circulation.[1] The Black formulation views the demand for circulation as a function of the population served, income per capita and a price variable representing the implicit cost to the borrower of borrowing the book when poorer service results from the failure of library expenditures to keep pace with circulation.[2] The definitions are made in such a way that they can be interpreted as applying to either public libraries, school libraries, or university libraries although the structural parameters would presumably be different. In the Black model the librarian is presumed to maximize circulation subject to revenue constraints on expenditures forwages, books, materials, and equipment.

Black was not able to estimate the parameters of his demand function. As with most studies of this kind his work on costs was more complete. He speculated that the income and price elasticities may both equal unity, on the assumption that the population elasticity is equal to one. Black thought that circulation would increase proportionately with increases in population and income and decline proportionately with increases in implicit cost of borrowing due to poorer service.

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[1] Stanley W. Black, "Library Economics" presented as Appendix F-2 (pp. 590-598) in Libraries at Large: The Resource Book Based on the Materials of the National Advisory Commission on Libraries edited by Douglas M. Knight and E. Shepley Nourse, R. R. Bowker Co., New York, 1969.

[2] The Black demand function is

$$C_t = A^1 P_t^e Y_t^v \left(\frac{1}{Ut}\right)^{-n} -n$$

where P_t is the population, Y_t is income per capita, and U is the implicit cost of borrowing. The latter term has the effect of lowering demand through a "price elasticity" relationship. The higher implicit costs presumably reduces circulation through effects of longer waiting times, faster recalls and other forms of reduced service.

The Black model does not appear to deal adequately with several important variables that affect library usage, namely age-structure and education. If the Hawaii and Cleveland studies are valid, the population characteristics which have the most effect on public library usage are age and education. Apparently, usage falls off sharply after age 24. The studies of library users suggest that education and social rank might be better predictors of use than per capita income. Income may, however, be a satisfactory proxy for education and social rank if data on these variables were lacking.

Other things equal, it is usually stated that the higher the educational attainment, the greater the library use. Although this relationship is probably true, one may well doubt just how much effect it has on total circulation apart from the age-structure effect. The use by adults is presently small in relation to school-age children. The question is: given the present age structure and level of educational attainment now present in a given library service area, would an increase in educational attainment have much effect on library use? It is plausible to think of situations where the effect would not be great although this matter deserves further study.

As far as income goes, higher per capita incomes may cause families (particularly adult members) to cut down on public library use by substituting other forms of leisure time activities and through the purchase of more paperbacks, books, phonograph records and magazines. Because of these factors we would suspect that the Black model might be improved by a reformulation concerning population and income variables.

The price elasticity in the Black model is an interesting attempt to get at the sensitivity of demand to changes in price in a situation where no direct prices are charged for library usage. If Black, or others following his model, could actually compute the rise in implicit cost of borrowing stemming from poorer services and then measure this effect on the demand for circulation, they would have achieved an important breakthrough. As we have mentioned several times before, the lack of user changes by which to quantify benefits to individual users is a major obstacle in the estimation of benefits.

2. The MIT Model

Jeffrey Raffel and Robert Shisko carried out a benefit-cost study of the libraries of the Massachusetts Institute of Technology sponsored by MIT's Center for International Studies.[3] The MIT study attempts to evaluate benefits of the MIT libraries by conducting a survey among faculty and students. The intent of the survey was to estimate benefits by having respondents rank a series of 20 alternative systems designed to improve library service or to save money. For three supplemental budgets ($200,000, $100,000 and $0). The respondents were asked to weight benefits and costs concerning new buildings, acquisition policies and technological innovations. Brief statements or descriptions of potential benefits and costs were given for each of the 20 alternatives.

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[3] Jeffrey A. Raffel and Robert Shisko, Systematic Analysis of University Libraries: An Application of Cost-Benefit Analysis to the MIT Libraries, The MIT Press, Cambridge, Massachusetts, 1969. See Chapter 5 entitled, "Benefit Estimation".

Unlike past user surveys, this evaluation explicitly asked respondents to make trade-offs between benefits and costs and to alter hypothetical budgeting allocation schemes. This is a commendable step. However, it can be pointed out that all of the choices had to be made within a list of library alternatives. That is to say, there were no choices comparing library services with other important aspects of university operation (e.g., faculty salaries, classrooms, new programs, scholarships, etc.) nor with other individual or personal items each user might wish. Moreover, the revenues of the higher library budgets were not related to higher tuition charges, reduced expenditures for other university services or to other possible ways to raise funds. The beneficiaries were thus not asked if they would be willing to "pay" for the alternatives. Consequently the "costs" of one system to another were solely in terms of other library systems sacrificed and not in terms of "costs" of a broader range of alternatives which might be relevant for benefit estimation in a more realistic context.

Two additional limitations of the survey probably should be noted: 1) only 40 per cent of 700 surveys were returned; 2) the survey was to be answered in 15 minutes. The recipients might not have had sufficient time, information, and experience to make intelligent choices among fairly complex alternatives.

Despite these limitations, the benefit survey technique used in the MIT study is a promising innovation which might be used more widely as an important aid in library decision-making. Surveys of this type, with the inclusion of costs and statements about benefits of alternative policies, can

help eliminate some of the librarians' speculation as to what their clientele really want. It is also possible then to place these wants in juxtaposition with costs so that we may be a little closer to having users "see" the costs of various library choices. If librarians are actually interested in satisfying "market demands" (maximizing library use), a great deal more can be done (than at present) to engage or employ library market research of various kinds so that the market can be better understood. Of course, if one believes that the preferences of users are not important, the survey technique would be of limited value.

One of the interesting results of the MIT study is that undergraduate students apparently differed greatly in their choices from graduate students and faculty. The undergraduate students placed primary emphasis on choices making it easier to use books or to copy materials for "outside" library use. Whereas faculty and graduate students exhibited a research orientation emphasizing choices involving acquisition, reference staff, and improved access to other libraries. The MIT study, not surprisingly, did not grapple with the tough questions of what priorities one should give to differing response patterns nor how those items supported by a vociferous minority might be weighed against items less vigorously supported by a majority.

3. The Goddard Study

Haynes Goddard recently completed a doctoral dissertation at Indiana University dealing with the measurement of benefits and costs of public libraries.[4] As might be expected, Goddard was more successful in deriving cost functions than

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[4]Haynes C. Goddard, "A Study in the Theory and Measurement of Benefits and Costs in the Public Library", unpublished doctoral dissertation, Indiana University, Bloomington, Indiana, 1970.

in dealing with library demand and benefits. In this latter area, Goddard has performed a useful service in summarizing the Cleveland and Hawaii studies regarding patterns of library use and pointing out important omissions (from the viewpoint of economic analysis) in these studies.[5] These two studies, the Goddard dissertation, and the Black and MIT models are useful starting points for further efforts to evaluate library benefits.

The Cleveland and Hawaii studies show that the preponderance of library use is accounted for by school-age users (76 and 69 per cent respectively). Goddard believes that "there is little doubt that the principal benefit of libraries is in the form of education." Without more detailed analysis of school-age use as a back up, one might quibble with this sweeping generalization. The similarity of benefits of public libraries to educational benefits of public schools serves to raise questions about desirability of separate institutional arrangements for school and public libraries which may make it difficult to take a systems approach to the provision of education.

Goddard analyzes the distribution of benefits and the costs of library operations by using, for the most part, the results of studies on income levels of library uses and studies of the incidence of property taxes used to finance libraries. Goddard finds that "library benefits are distributed progressively according to income, and the costs of library operations tend to be distributed

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[5] Regional Planning Commission of Cleveland - Cuyahoga County, Changing Patterns - Branch Library Report, August 8, 1966; Planning for Libraries in Hawaii, Office of Library Services, Department of Education, State of Hawaii, Honolulu, 1968.

regressively according to income, such that the poorer subsidize library benefits to the richer." While the evidence presented by Goddard is suggestive, it is not clear that it is conclusive. Perhaps the conclusion is on strongest grounds in terms of subsidizing of recreational reading to adults. However, a great deal more study is required of the incidence of private and public benefits associated with library use by school-age youths before one can speak with a good deal of authority on the matter. All studies of the incidence of the property tax show that it is regressive with respect to income, particularly when allowing for the deduction of property taxes in federal income tax returns.

Benefit Estimation for Two Library Services

Benefit estimation for library services appears desirable and feasible. Yet, very little progress has been made in the actual calculation of benefits. We could find no study that estimated benefits of library services in dollars. Once quantified, of course, benefits should be compared with costs (total benefits with total costs, incremental benefits with incremental costs). In this section our purpose is to suggest ways to estimate benefits from two types of library use: circulation of books to adults and the use of library services by school-age youths.

As we suggested in Chapter IV, there are at least three major ways to estimate benefits of library services: 1) use market prices of similar services in the private sector, 2) use costs of supplying similar services by alternative means to set a ceiling on the value of benefits produced by the public library, and 3) use costs of providing a service as the minimum benefits that the service must yield. A fourth method of benefit estimation is to devise surveys similar to the one used in the MIT study which had respondents make

choices between alternatives involving different costs and different total budgets. A questionnaire could specify experimental designs to indicate the willingness of respondents to pay for different kinds of library service.

Perhaps the most compelling evidence on benefits (and willingness to pay) would be to have a public vote or referendum on major library investments. Presumably, the voters would be supplied with explanatory materials on expected costs and benefits. If the electorate, by a clear majority, willingly approved a tax burden for the provision of public library services with knowledge of the "facts", we could say that the collective judgment was that the expected benefits exceeded the costs. Even in this case, however, it would be possible for non-taxpaying voters to outnumber taxpaying voters and to place the burden of the costs on the taxpayers. Also, we have no guarantee that the voters were the primary beneficiaries of the services.

Adult Circulation. The two major types of library use in Indiana public libraries are by school-age youths and by adults (circulation). Benefit measures will be easier to devise for adult circulation than for library use by school-age youth. For adult circulation it should be possible to find prices or rentals for similar books in the rental sections of private and public libraries. Even so we may not have enough information to compute a complete demand function. But we should be able to get enough price and quantity information to allow us to make some crude calculations. In addition, it is possible to look at prices of new and used paperback and hardback books to set possible upper limits on benefits for library circulation. Ideally, we would also like to know something about the socio-economic status of the borrowers and the use they make of the

books. From this type of information it might be possible to infer the amount of benefits to the public at large as well as benefits to individual users by income class.

We were disappointed to find little data on rental libraries. With more time a great deal more information could probably be found. The best source was an article entitled "Protrait of a Rental Library" describing operations of a successful private rental library operated as a separate department in a book-shop in Larchmont, New York.[6] The user statistics for this rental library appear quite comparable to those found in surveys of adult circulation in public libraries. The borrowers are largely middle-class persons, with 75 per cent of the borrowers being women and 25 per cent men. About 65 per cent of the books borrowed are novels, 20 per cent mysteries and suspense stories, and 15 per cent are non-fiction. The leading renters are the current "best sellers" in fiction and non-fiction.

The rental fee on most books is 10 cents a day with a minimum rental of 30 cents. On books that list between $7 and $9 there is a minimum rental of 50 cents for the first three days and 10 cents a day there after. On books that cost $9 or more (mostly non-fiction), the rate is still 10 cents a day but the charge for the first three days is $1. The average rental charge is about 70 cents. In the first year of operation the rental library department made a net profit of 50 per cent on gross receipts of $14,000.

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[6]Charles B. Anderson, "Protrait of a Rental Library," Publishers Weekly, Vol. 194, Sept. 9, 1968, pp. 52-54.

No deposits are charged except for transients who are asked to leave a dollar deposit which is refundable. Of 800 library members about 500 are occasional readers and most of the circulation is accounted for by 300 regular readers. The operating rule of thumb is to carry 1200 books in the library at any one time, representing a capital investment of about $3700. Normally 300 to 400 books will be out on rental at any time with 800 to 900 books on the shelves.

The advantage to the user of the rental library over the well-supported public library in Larchmont is two-fold. (1) Current books can be secured faster -- generally without waiting. The public library buys one to three copies of a best seller whereas the rental library may buy 10 to 40 copies. (2) The selection of new fiction and mysteries is considerably wider. Presumably, the local public library has fewer customers because it sends people in a hurry to the rental library. Pressure is reduced for the public library to acquire large amounts of popular fiction which may have a short life. It is reported that several members of the staff of the public library, including the head librarian, are active members of the rental library.

We do not know if the experience of the one rental library is typical. Yet, it is (very) suggestive. Our preliminary cost data (in Chapter V) showed that the average expenditure per book circulated in Indiana public libraries ranged from 5 cents to 93 cents with the median about 45 cents. If the average benefits for adult circulation as measured by average private rentals were 70 cents (the average rental charge reported in Larchmont), the benefits might exceed the costs for the bulk of adult library circulation in Indiana. This is, of course, a very "shaky" sort of inference based upon some

unverified assumptions, e.g., that expenditures for circulation of adult books are more or less the same as the average for all circulation and that the quality of public library service to adults in Indiana libraries is comparable to that provided borrowers at the Larchmont rental library. The service of the private rental library is probably superior because of less waiting and wider selection of popular books. Consequently, benefits of adult circulation in public libraries would not be as great as those of the rental library and might not exceed costs.

Perhaps the most interesting aspect this brief look at a rental library is the willingness of adults to pay for superior library service for popular books when somewhat less desirable service was available at the local public library "free of charge". If some user charges were placed upon adult borrowing from public libraries, two things would probably happen: (1) private rental libraries would be encouraged to supply more quick service because readers would not longer have the "free" alternative for such books, and (2) public libraries would also be encouraged to supply the services (for a charge) that the public demands so heavily of the private rental library. If public libraries had somewhat similar rental shelves, improved service could probably be provided by using the increased revenues from rental charges. Also, "profits" from the rental section perhaps could help bear some of the costs of general public library overhead. Moreover, public tax funds could be now used to support other library services producing more direct public benefits than might be forthcoming from supplying best sellers to adults.

The costs of paperbacks would also place a ceiling on library benefits from much of the adult circulation. Best sellers usually appear in paperback within a year after the original publication at an average cost of approximately $1. The fact that many adults purchase paperbacks implies that this service is more convenient or superior to similar but "free" service at the public library. Therefore, the price of a paperback must exceed the benefit attained by adults from the same book available free at the public library. But the paperback selection contains many books not found on public library shelves.

The cost of a paperback depends upon the number of people who read each copy (the average "circulation"). Clearly, if a $1 paperback is circulated several times, the cost per unit circulation could approach or fall below expenditures per book circulated in public libraries. Again, this example raises questions about benefits and costs for the adult circulation by public libraries of certain books.

School-Age Usage. We were not able to go very far in estimating benefits for public library use by school-age youth. Much of this use is educational and consists of private benefits to individuals and their families plus some general educational benefits to the public at large. Yet, some of the library use by youths is recreational and thus subject to some of the same techniques of benefit estimation suggested for adult circulation. We simply do not know much about the various uses made of public libraries by youth -- what age-groups, what types of books, what study hall functions and what reference use.

As a first approximation we might assume that use of public libraries by school-agers is similar to their use of school libraries. But the similarity or difference would be governed by a great number of factors affecting the range and quality of services provided by each library. School libraries tend to have smaller collections, are operated more by part-time personnel, have restricted seating space, and are open fewer hours than public libraries. In many small Indiana communities, both the school library and the public library, each existing independently of the other, provide only very limited collections, space, personnel and operating hours.

To the extent that part of the library service to school-age youth provided by the two institutions is comparable (substituable), the cost of supplying service in one institution sets a <u>ceiling</u> on the value (benefit) of the service provided by the other. Even though educational benefits are difficult to quantify, a comparison of the costs of providing roughly equivalent services by alternative means can help guide decisions concerning the more efficient method of expanding the services. For example, the educational services of public libraries for school-age youth might be more expensive (or maybe less) than similar services supplied by school libraries.

Assume for the moment that the service provided by school libraries in Indiana is comparable to the service provided to school-age youth by public libraries. What are the costs in terms of use for each type of service? We were surprised to learn that no one really knows. Here is some fragmentary information from a search of library cost and use data.

Statistics on public school libraries for 1960-61 showed that total library expenditures (including salaries for librarians, materials, binding and supplies) for all public school districts of 150 pupils and over were $41,338,662 for the Great Lakes Region. The enrollment in these schools of the Great Lakes Region that year was 7,129,830.[7] The average annual cost per school pupil was thus $5.80. Cost figures for other regions in the United States were similar. By contrast, expenditures per capita for public libraries in Indiana in 1967 were $3.95.

What these bits of cost information really mean is not clear. The more relevant information needed to make an appraisal of the two institutions is not available. We are not at all sure to what extent the service provided to school-age youth by the two institutions is comparable. We do not know the extent of use of each institution by youth. The number of school children actually using the school library will be smaller than the number of pupils enrolled. But, the same is true on per capita cost figures for public libraries which show costs per person for all potential users -- not for actual users. Moreover, school-age youth may use both libraries as a matter of common practice.

Our preliminary feeling is one of surprise that so little is known about these matters. We were also somewhat surprised to find that costs per pupil for school libraries seemed to be relatively "high". Clearly these are important avenues for further study. Again, we are back to a basic point that keeps cropping up time and time again. We need more information to better understand the relationships between two separate library institutions supplying service to similar clientele (school-age youth) each supported by public funds from property tax levies which many people believe are too high.

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[7] Statistics of Public School Libraries, 1960-61, U.S. Office of Education, Washington, D.C., Table 3, p. 14 and Table 12, p. 55.

Chapter VII

SUMMARY AND CONCLUSIONS

This study is an exploratory and experimental attempt at benefit-cost analysis of public libraries in Indiana. It attempts to highlight the economic issues that arise in decisions concerning the provision and financing of libraries. The analysis is directed toward public libraries, but the approach and techniques of analysis are generally applicable to all libraries.

Although the time appears ripe for a benefit-cost study of the public library, a systematic attempt to evaluate benefits and costs is still a long way from realization. Unfortunately, the available data concerning library operations are inadequate to permit a good benefit-cost analysis. Cost data are available for certain expenditure categories but they are difficult to transform into economic costs which show costs in relation to output or performance. Benefit data are even more inadequate. In large part, the inadequacy of data for benefit estimation results from scanty or insufficient information about library use. With more information about library use (school libraries as well as public libraries), one could at least more reliably estimate the range of benefits by estimating costs of providing similar services in alternative ways.

Four Important Issues

Our study of Indiana's public libraries suggests four major issues.

1. Local public officials, faced with severe budget problems, are undoubtedly going to ask searching questions of library officials, forcing these officials to justify their requests for public revenues. With this in mind,

public library officials should re-examine the arguments they have used in the past for public support. They should evaluate their objectives in the light of public library use. At present there seems to be a sharp contrast between the stated objectives of public libraries and the library use by various groups.

2. Public library officials should begin to think in terms of benefits and costs of the services they provide. How much are the benefits of library services worth? What is the cost and how are the costs and benefits distributed? What groups (income, social, age, etc.) benefit most and what groups bear the costs of providing library services? Can the objectives of public library service be all-inclusive as to "insure that every person should have a level of library service that meets his needs" without a careful consideration of benefits in relation to costs? Is it desirable to support the position that public library services should be provided universally to all Indiana residents without also making an attempt to show the benefits in relation to costs? It is possible that the provision of "free" library services to some users may not be either efficient or equitable. Are there other cheaper, more equitable ways to perform some of the services now supplied by public libraries? For example, what are the best ways to purvey popular fiction to adult readers?

3. Surveys of library users show that most users are from the middle and upper middle income groups. And the major use of libraries by adults is for pleasure, primarily reading novels or light fiction. The revenues to finance public libraries come from the property tax. Studies of the property tax show that it is somewhat regressive, i.e., that it takes a larger share of income from low income families than from high income families. These findings suggest that the distributional effects of the costs and benefits may be preverse, that is,

they may shift real income from lower income groups to the middle and upper middle income groups. If, in addition, the primary purpose of adult use of public libraries is for recreational reading, the libraries may have a fairly weak argument for public support. Therefore, officials of public libraries should consider the alternatives of employing user charges or rental charges at least for certain uses of public libraries such as the circulation of light fiction.

4. The user surveys show that school-age children constitute the bulk of library users. As a result, a question arises concerning the relationship between school libraries and public libraries. The trend seems to be for school-age youths to account for a greater proportion of the use of public libraries. Does this mean that school libraries are inadequate? Can public libraries perform the needed functions for school children better than the school libraries? If so, should they receive support from the school budget? Or should public libraries and school libraries try to combine, at least in smaller communities? Small school libraries are likely to be as unsatisfactory as small public libraries. Should school libraries and public libraries go their separate ways? How best can we provide library service in rural areas and small towns? This last question is important for Indiana because 150 public libraries in the state serve towns of less than 7,000 in population.

Background Trends

A number of trends are relevant to the resolution of the general issues suggested above. The following list includes those that appear most important.

1. Rural populations are declining and will undoubtedly continue to decline in Indiana.

2. The economic future of many small towns in Indiana does not appear bright. Growth of medium and large-sized Indiana cities is likely to continue at the rate of recent years.

3. Although the total population of the state will grow, library use may not. For the U.S. as a whole, per capita library use has been declining.

4. Indiana is not apt to experience rapid economic growth or rapidly rising per capita incomes. The fiscal position of Indiana will probably remain tight over the next decade (perhaps longer) with many unmet public expenditure needs and a shortage of state and local revenues.

5. The other agencies of mass communication are expanding and are reaching much larger segments of the population with more frequency and with more regularity than are public libraries. This trend has been accentuated by the extension of television in the last two decades. The rapid rise in the publication and widespread distribution of paperbacks has provided the book reader with a wealth of inexpensive reading material almost inconceivable twenty-five years ago.

6. In the larger cities, and particularly in metropolitan areas, population is not only increasing, but it is spreading out. Very little growth is occurring in the central parts; virtually all of it is occurring at the peripheries. Even though the population of central cities is not changing much in numbers, it is changing in character as many middle and upper income families move to the suburbs to have their places taken by low income families. In the large central cities in the north, the replacement families in the central cities are largely black. As a result of these changes, library circulation in central city libraries has been declining. By contrast, the suburbs are receiving large

numbers of middle income, more highly educated families who normally constitute the bulk of library users. Another factor of relevance is the lower density of population in the suburbs than in central cities. With a more scattered population, libraries simply cannot be nearby for most people. Thus library users in suburbs are more likely to drive an auto to the library than to walk.

7. The fiscal position of American cities is worsening relative to other levels of government because of revenue inflexibility and rising expenditure needs. The property tax will come under increased attack as the rates get higher. It is likely that cities will have to turn increasingly to other sources of revenues (including user charges) to meet the increased public expenditure needs of the future.

These issues and trends will have increasing impact on public libraries, indeed all types of libraries, in the 1970's. The library profession and trustees will have to find fresh answers to unsettling questions. It is already clear that tax-supported institutions are finding it necessary to bring increasingly sophisticated arguments to support their budgets. Competition for the tax dollar grows. The benefits of public libraries are going to have to be explained in far more objective terms than was necessary in the past.

The Indiana Library Studies

The Indiana Library Studies represent the first statewide exploration of Indiana libraries of all types and of the library and information needs of Indiana's citizens. A federally funded research project of the Indiana State Library, the Studies are directed by Dr. Peter Hiatt, Consultant to the Indiana State Library and Associate Professor of Indiana University's Graduate Library School. Guidance for the project and advice on the reports have been provided by the Indiana Library Studies Advisory Committee:

Harriet E. Bard and Ralph Van Handel
Indiana Library Association

Anthony Cefali and Ray Fetterly
Indiana Library Trustees Association

Georgia Cole and Estella Reed
Indiana School Librarians Association

John H. Moriarty and Donald E. Thompson
College and University Roundtable of the Indiana Library Association

William H. Richardson and Ralph Simon
Indiana Chapter of the Special Libraries Association

Marcelle Foote, Director
Indiana State Library

This report has been submitted to the following:

Indiana Library and Historical Board
Indiana Library Association
Indiana Library Trustees Association
Indiana School Librarians Association
College and University Roundtable of the Indiana Library Association
Special Libraries Association, Indiana Chapter

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